



*THE JOHNS HOPKINS UNIVERSITY*  
*BALTIMORE, MARYLAND*

*Conferring of Degrees*  
*at the close of the eighty-seventh academic year*



*JUNE 11, 1963*  
*Keyser Quadrangle*  
Homewood



# ORDER OF PROCESSION

## *The Graduates*

### *Marshals*

JAMES H. CARPENTER  
CARL F. CHRIST  
JOHN W. GRYDER  
WILLIAM H. HUGGINS  
RICHARD A. MACKSEY  
J. HILLIS MILLER

ELIEZER NADDOR  
ALVIN NASON  
PHILIP B. TAYLOR  
ROBERT WAGNER  
CHARLES M. WYLIE  
THEODORE R. F. WRIGHT

\*

## *The Faculties*

### *Marshals*

JAMES W. POULTNEY and JOHN WALTON

\*

## *The Deans, The Trustees and Honored Guests*

### *Marshals*

NATHAN EDELMAN and M. GORDON WOLMAN

\*

## *The Chaplain*

*The Presenter of the Honorary Degree Candidate*

*The Commencement Speaker*

*The President of the University*

### *Chief Marshal*

WALTER S. KOSKI

\*

## *For the Presentation of Diplomas*

### *Marshals*

MAURICE J. BESSMAN  
CLIFFORD A. HOPSON

EDWIN S. MILLS  
W. KELSO MORRILL

\*

*The ushers are undergraduate students of  
The Johns Hopkins University*

# ORDER OF EVENTS

*Milton Stover Eisenhower, President of the University, presiding*

\*

## PROCESSIONAL

CROWN IMPERIAL — W. WALTON

*John H. Eltermann, Organist*

*The audience is requested to stand as the Academic Procession moves into the area and to remain standing until after the Invocation and the singing of the National Anthem.*

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## INVOCATION

*The Reverend T. Guthrie Speers  
Chaplain, Goucher College*

\*

THE NATIONAL ANTHEM

THE UNIVERSITY ODE

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## CONFERRING OF HONORARY DEGREE

OTTO F. KRAUSHAAR

*Presented by Maurice Mandelbaum*

\*

## ADDRESS

OTTO F. KRAUSHAAR

*President  
Goucher College*

\*

## CONFERRING OF DEGREES ON CANDIDATES

*Presented by Dean G. Heberton Evans, Jr.:*

BACHELORS OF ARTS

*Presented by Dean Robert H. Roy:*

BACHELORS OF ENGINEERING SCIENCE

MASTERS OF SCIENCE IN ENGINEERING • DOCTORS OF ENGINEERING

# ORDER OF EVENTS

## CONFERRING OF DEGREES ON CANDIDATES

*Continued*

*Presented by Dean Richard A. Mumma:*

BACHELORS OF SCIENCE • BACHELORS OF SCIENCE IN NURSING  
BACHELORS OF SCIENCE IN ENGINEERING  
MASTERS OF SCIENCE IN ENGINEERING  
MASTER OF SCIENCE • MASTERS OF EDUCATION  
CERTIFICATES OF ADVANCED STUDY IN EDUCATION

*Presented by Dean Ernest L. Stebbins:*

MASTERS OF SCIENCE • DOCTORS OF SCIENCE  
MASTERS OF PUBLIC HEALTH • DOCTORS OF PUBLIC HEALTH

*Presented by Dean Francis O. Wilcox:*

MASTERS OF ARTS  
SCHOOL OF ADVANCED INTERNATIONAL STUDIES

*Presented by Dean Thomas B. Turner:*

DOCTORS OF MEDICINE

*Presented by Dean G. Heberton Evans, Jr.:*

MASTERS OF ARTS IN TEACHING  
MASTERS OF ARTS • DOCTORS OF PHILOSOPHY

\*

Presentation of the Christian R. and Mary F. Lindback

## AWARDS FOR DISTINGUISHED TEACHING

*The President of the University*

\*

## CHARGE TO GRADUATES

*The President of the University*

\*

## BENEDICTION

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## RECESSIONAL

TRIUMPHAL MARCH — W. FAULKES

*The audience is requested to remain standing after the Benediction  
until the faculties and graduates have left the area.*

The Alumni Association of The Johns Hopkins University invites all graduates, their relatives and friends, and the members of the faculty to attend a reception on Keyser Quadrangle immediately following the Commencement Exercises.

# ACADEMIC DRESS

THE custom of wearing academic dress stems from the Middle Ages, when scholars were also clerics and wore the costume of their monastic order. The hood was originally a cowl attached to the gown which could be slipped over the head for warmth. The cap, originally round, later became the square mortar-board as we see it today.

Today the cap is the same for all American degrees, although the recipient of a doctoral degree is entitled to wear a gold tassel. The gown varies for the respective degrees. The Bachelor's gown is worn closed and can be distinguished by its long, pointed sleeves. The Master's gown is designed to be open with the arms worn through the slits in the elbows of the sleeves. The Doctor's gown, also worn open, has full, bell-shaped sleeves with three horizontal bars stitched across the upper arm. There is a velvet panel draped around the neck and stitched down the front edges. This velvet trimming may be either black or the same color as the velvet border of the hood.

The hood also varies for the respective degrees. The Bachelor's and Master's hoods are of the same design, pointed at the base. The Bachelor's hood is three feet long; the Master's hood is three and one half feet long. The Doctor's hood is four feet long, of fuller shape and rounded at the base.

The hood is bordered with velvet, the color of which indicates the field of study in which the degree was earned:

Dark blue .....	Philosophy
Light blue .....	Education
Orange .....	Engineering
Gold-yellow .....	Science
Green .....	Medicine
Salmon pink .....	Public Health
Pink .....	Music
Purple .....	Laws
White .....	Arts and Letters

The silk lining of the hood represents the institution which granted the degree. If more than one degree is held, the gown and hood of the higher or highest degree is worn. The linings seen in today's academic procession may include:

## BLACK

Black, old gold chevron..... Johns Hopkins

## BLUE

Light blue, white chevron..... Columbia  
Dark blue..... Yale  
Blue with white chevron..... Duke  
Dark blue, two orange chevrons.. Illinois  
Light blue, two white chevrons.. North Carolina

## GOLD

Old gold, maroon chevron..... Minnesota  
Old gold..... Iowa  
Gold, blue chevron..... California  
Gold .....

## PURPLE

Purple, gold chevron..... Northwestern  
Purple ..... New York  
University

## RED

Bright red..... Wisconsin  
Plum, with scarlet..... London  
Maroon ..... Chicago  
Crimson ..... Harvard  
Carnelian, two white chevrons... Cornell  
Cardinal ..... Stanford  
Red, tri-chevron in center..... Heidelberg

## YELLOW

Dandelion yellow..... Rochester  
Maize, azure blue chevron..... Michigan  
Yellow and white..... Sorbonne



# CANDIDATES FOR DEGREES

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## BACHELORS OF ARTS

MICHAEL AISNER AARONSON, of Baltimore, Md.  
MARTIN DAVID ABELOFF, of Shenandoah, Pa.  
JEAN THEODORE ALBERT AHRENS, of Washington, D. C.  
KARL GREGORY ALBRECHT, of Baltimore, Md.  
RICARDO ALBERTO ALFARO, of Wilmington, Del.  
DAVID JAMES ALLAN, of Silver Spring, Md.  
DAVID VINCENT ANDERSON, of Chicago, Ill.  
PETER FREDERICK ANDRUS, of Wayne, N. J.  
ERIC JONATHAN ARTZT, of New York, N. Y.  
CHARLES ROBLIN BACKUS, of Silver Spring, Md.  
LENOX DIAL BAKER, JR., of Durham, N. C.  
JOHN DAVID BALDWIN, of Cincinnati, Ohio  
JOEL THOMAS MITCHELL BAMFORD, of Bronxville, N. Y.  
MARTHA JANE BARKINS, of Scarsdale, N. Y.  
CYRIL BARNERT III, of New Rochelle, N. Y.  
KARL RICHARD BARNICKOL III, of Chicago, Ill.  
ANTHONY ALBERT BAUM, of Elkins Park, Pa.  
CHARLES RALPH BEAMON, JR., of Norfolk, Va.  
LEWIS CHARLES BECKER, of Pacific Palisades, Calif.  
JAMES CLAYTON BEEBE, of Baltimore, Md.  
JOHN CHAMBERS BEECHER, JR., of Paoli, Pa.  
PETER JACOB BEREST, of Eastchester, N. Y.  
JOHN WILLIAM BLOOM, of Baltimore, Md.  
MARTIN BLUMENFELD, of Baltimore, Md.  
EDWARD JOSEPH BONAVILLA, of Rochester, N. Y.  
EUGENE BRUCE BOWER, of Salisburv, Md.  
WILLIAM P. BRANDON, JR., of Hickory, N. C.  
ANDREW FULLER BROOKER, JR., of Bowling Green, Ohio  
ROBERT LAKE BUCKWALTER, of Baltimore, Md.  
JOHN DAVID BUKRY, of Baltimore, Md.  
ROBERT HICKMAN BURNS, of Baltimore, Md.  
WILLIAM MORRIS BUSH, of Yeadon, Pa.  
MARTIN B. CAGAN, of Kearny, N. J.  
DANIEL THOMAS CALDON, of Downers Grove, Ill.  
BRUCE M. CAMITTA, of Neponsit, N. Y.  
BARRY BLAIR CAMPBELL, of Millville, N. J.  
JAMES DOUGLAS CAMPBELL, JR., of Versailles, Ky.  
RICHARD NEVILLE CARROLL, of Ruxton, Md.  
CHARLES MARGERUM CHADWICK, of Boyds, Md.  
JOHN ALAN CHEW, JR., of Boxford, Mass.  
HENRY ANTHONY CICCARONE, of Baltimore, Md.  
JAMES STEVENSON CLARK III, of Ellicott City, Md.  
MALCOLM KENT CLEAVELAND, of Chagrin Falls, Ohio  
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LAWRENCE MASON CLOPPER, JR., of Denton, Md.  
MURRAY ALAN COHEN, of Baltimore, Md.  
STEPHEN M. COHEN, of Highland Park, Ill.

RICHARD JAMES COLEMAN, of Lebanon, Pa.  
THOMAS NARAMORE CONNOLLY, of South Charleston, W. Va.  
CHRISTOPHER CARNEY CONSTABLE, of Rivera Beach, Fla.  
GEORGE ALBERT COOKE, of Baltimore, Md.  
JOHN COATES COX, of Evansville, Ind.  
MATTHEW ALLEN CRENSON, of Lutherville, Md.  
DAVID LAWRENCE CUMMINS, of Johnstown, Pa.  
JONATHAN EDWARDS CUNTZ, of New York, N. Y.  
JOSEPH LARRY DAUBEK, of San Jose, Calif.  
RONALD LLOYD DAVIS, of Baltimore, Md.  
PAUL WOLFGANG DEUSSEN, of Baltimore, Md.  
THOMAS EDWIN DIGBY, of Oak Harbor, Ohio  
LESTER ARTHUR DOLAK, of Joliet, Ill.  
THOMAS JOSEPH DOLCE, of Palm Beach Shores, Fla.  
JONATHAN MARSHALL DONNER, of Carnegie, Pa.  
HAROLD JAY DUNLAP, JR., of Baltimore, Md.  
STEPHEN MARTIN ELLER, of Baltimore, Md.  
ANTHONY ENG, of Montclair, N. J.  
MELVIN H. EPSTEIN, of Brooklyn, N. Y.  
PHILIP FREDERICK ERCK, of Absecon N. J.  
DENNIS JOHN FARNHAM, of Stamford, Conn.  
STEPHEN PHILIP FEIGIN, of Waterbury, Conn.  
LARRY BRIAN FELDMAN, of Baltimore, Md.  
WILLIAM FELDMAN, of New York, N. Y.  
JOSÉ LUIS FERNÁNDEZ-MARCHESE, of San Juan, Puerto Rico  
FRANCIS JOSEPH FISHER, of New York, N. Y.  
HARRIS RONALD FISK, of Baltimore, Md.  
HOWARD JAMES FREEMAN, JR., of Baltimore, Md.  
JOHN ANTHONY GALOTTO, of Hawthorne, N. J.  
WILLIAM LAURENCE GEBEL, of Baltimore, Md.  
JOHN HOWARD GENRICH, of Buffalo, N. Y.  
PAUL MICHAEL GERTMAN, of Coral Gables, Fla.  
ROBERT WOLF GLASNER, of Baltimore, Md.  
THOMAS JAMES GLEASON, of Atlanta, Ga.  
JOHN CONRAD GLOCK, of Johnstown, Pa.  
MELVYN HIRSH GOLDBERG, of Baltimore, Md.  
JONATHAN EVAN GORDON, of Los Angeles, Calif.  
JOSEPH WELLS GOTWALS, JR., of Chambersburg, Pa.  
RICHARD WALTER GRAHAM III, of Baltimore, Md.  
MELVIN MACPIKE GRAVES, JR., of Pocatello, Idaho  
WILLIAM MARTIN GREEN, of Merrick, N. Y.  
ZACHARY DAVID GROSSMAN, of Baltimore, Md.  
CORNELIUS LEE GROVE, of Midland Park, N. J.  
WILLIAM MICHAEL GROVES, of Delmar, N. Y.  
JOHN WILLIAM GUSTAITIS, of East Chicago, Ind.  
GORDON WILLIAM HALL, of Rockford, Ill.  
CHARLES EDWIN HAMILTON III, of Charleston, W. Va.

JOHN WILLIAM HARMAND, of Verona, N. J.  
 BROOK HART, of New York, N. Y.  
 RICHARD LEE HARTMAN, of Scarsdale, N. Y.  
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 LEE FRANCIS HEINER, of Baltimore, Md.  
 W. MICHAEL HENDRICKS, of Sea Girt, N. J.  
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 MICHAEL DICKINSON HOBBS, of Baltimore, Md.  
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 ROBERT M. HUEBSCHMAN, of Baltimore, Md.  
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 JAMES EDWARD JOHNSTON, of Wilmington, Del.  
 JAMES EVERETT JOY, of Collingswood, N. J.  
 LOWELL HART KALLEN, of Newark, N. J.  
 MURRAY ALAN KATZ, of Albuquerque, N. M.  
 ROBERT EMMET KENNEDY, JR., of New York, N. Y.  
 RICHARD WILLIAM KESLER, of Lansing, Ill.  
 JOHN HERBERT KILBY, JR., of Colora, Md.  
 WILLIAM TRAVERS KIRWAN, of Baltimore, Md.  
 ROBERT LEE KITTREDGE, of Longmeadow, Mass.  
 ALAN LEE KJELLEREN, of Baldwin, N. Y.  
 THOMAS HUME KOEHLER, JR., of Wilton, Conn.  
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 LEE ROBERT KRONICK, of Far Rockaway, N. Y.  
 PAUL JOSEPH KROUNER, of Albany, N. Y.  
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 HUGH LOGAN, of Baltimore, Md.  
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 JOSEPH WILLIAM LOWTHER, of Camp Hill, Pa.  
 MELVYN LOUIS LURIE, of Baltimore, Md.  
 ANTHONY STEWART MAURICE, of Chapel Hill, N. C.  
 NELSON LEE MAX, of Baltimore, Md.  
 JOHN MORTON McILVAIN, of Baltimore, Md.  
 THOMAS EDWARD McNAMARA, of Baltimore, Md.  
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 GLENN EDWARD MILLER, of Baltimore, Md.

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 E. BURKE O'CONNOR, JR., of Buffalo, N. Y.  
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 JAN MARC ORENSTEIN, of W. Hartford, Conn.  
 NORWOOD BENTLEY ORRICK, JR., of Ruxton, Md.  
 HENRY MILLER PANCOAST, of Salem, N. J.  
 ARNOLD ZOREL PARITZKY, of Baltimore, Md.  
 JOHN DE LA ROCHE PATTERSON, JR., of Scotia, N. Y.  
 ANTHONY GERALD PECK, of Duquesne, Pa.  
 JOSEPH LAURENCE PERROTTO, JR., of Meadville, Pa.  
 MARSHALL PLAUT, of Baltimore, Md.  
 THOMAS FRANKLIN PRATHER, of Hagerstown, Md.  
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 THOMAS M. RENAHAN, JR., of Mattapoisett, Mass.  
 THOMAS ROBERT CHRISTIAN REUTTER, JR., of Seaside Heights,  
 N. J.  
 JOHN FRANCIS ROGERS, of Severna Park, Md.  
 E. RICHARD ROSENBLATT, of Pittsburgh, Pa.  
 DANIEL MARK ROSENFELT, of Baltimore, Md.  
 ALLEN NEAL ROSS, of Westport, Conn.  
 JOHN WARREN ROSS, of Green Bay, Wis.  
 CHARLES ALFRED ROSWELL, JR., of Elkridge, Md.  
 MARK Roter, of Great Neck, N. Y.  
 BURTON NORMAN ROUTMAN, of Sharon, Pa.  
 DAVID STEWART ROWE, of Arlington, Va.  
 HOWARD DAVID RUBENSTEIN, of Baltimore, Md.  
 MILLARD STEVEN RUBENSTEIN, of Baltimore, Md.  
 STEPHEN JOHN SALCHENBERGER, of Chicago, Ill.  
 FREDERICK DOLEZAL SCHIRRMACHER, of Washington, D. C.  
 ANN-LOUISE SCHLESINGER, of Albany, N. Y.  
 CARL STANLEY SCHNEIDER, of Pittsburgh, Pa.  
 IRVING CONRAD SCHWAB, of Colorado Springs, Colo.  
 HENRY LEE SCHWARTZ, of Great Neck, N. Y.  
 ETHAN ABBA SEIDEL, of Baltimore, Md.  
 RICHARD CRAWFORD SHAMBERGER, of Baltimore, Md.  
 CLEON MOORE SHUTT, JR., of Baltimore, Md.  
 FRANCINE M. SIEGEL, of Rosedale, N. Y.  
 STUART BEAL SILVER, of Philadelphia, Pa.  
 VINCENT RAYMOND SITES, of Miami, Fla.  
 JOHN WILLIAM SITTLER, of Baltimore, Md.



RODNEY DAN SKOGLUND, of Silver Spring, Md.  
 CARROLL JOHN SLEDZ, of Rivera Beach, Md.  
 ALBERT NEALE SMITH, JR., of Riderwood, Md.  
 FREDERICK LUDLOW SMITH, of Short Hills, N. J.  
 THOMAS SPENCE SMITH IV, of Perry Hall, Md.  
 PETER BALLARD SNOW, of Washington, D. C.  
 JAMES GENARD SOFKO, of Hagerstown, Md.  
 DANIEL RICHARD SOLIN, of Pittsfield, Mass.  
 ALAN LOWELL SORKIN, of Hyattsville, Md.  
 RONALD PAUL SPARK, of Melrose Park, Pa.  
 ARNOLD SPITZ, of Jamaica, N. Y.  
 VINCENT JOHN STEADMAN, of Baltimore, Md.  
 SHELDON ELLIOT STEINBACH, of New York, N. Y.  
 JEFFREY LEE STEPHENS, of Baltimore, Md.  
 FREDERICK PAUL SITIK, of Englewood, N. J.  
 AARON ISAAC STOPAK, of Baltimore, Md.  
 DONALD ROBERT STUTMAN, of Baltimore, Md.  
 HERBERT MORRIS SWICK, of Shawnee Mission, Kan.  
 EDWARD SWIDERSKI, of Baltimore, Md.  
 JAMES WALTER TAYLOR, of Roselle, N. J.  
 ROGER WARREN TITUS, of Chevy Chase, Md.

CHARLES GESSNER TWYMAN, of New York, N. Y.  
 CHARLES WILLIAM VAN BEKE, of East Orange, N. J.  
 GLENNWOOD HOLLAND VAN VALKENBURGH, of Georgetown,  
 Del.  
 SMITH CREE VAUGHAN, of Manhasset, N. Y.  
 WAYNE EDWARD VENEMAN, of Evansville, Ind.  
 RICHARD ALLEN VOGEL, of Maplewood, N. J.  
 FRANCIS MARTIN VOYTON, of Baltimore, Md.  
 FRANCES WATT, of Washington, D. C.  
 KEITH LEVERET WAUCHOPE, of Huntington, N. Y.  
 CHARLES JEFFREY WEISS, of Stamford, Conn.  
 JOHN JAY WELTMAN, of Cedarhurst, N. Y.  
 PETER WILHOVSKY, JR., of Clifton, N. J.  
 WESLEY CORRIGAN WILLIAMS, of Gates Mills, Ohio  
 WENDYLL STANLEY WILSON, of Murrysburg, Pa.  
 IRVING DARRYL WOLFE, of Baltimore, Md.  
 ROBERT STEVEN YOUNG, of Philadelphia, Pa.  
 ANNA ZAGOLOFF, of Poughkeepsie, N. Y.  
 RICHARD LEE ZEASKE, of Bettendorf, Iowa  
 JAMES HARRISON ZIEGLER, of Bernardsville, N. J.  
 HOWARD ALAN ZIPSER, of New York, N. Y.

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### *Graduating with General Honors*

MICHAEL AISNER AARONSON  
 MARTIN DAVID ABELOFF  
 JOHN DAVID BALDWIN  
 CYRIL BARNERT, III  
 KARL RICHARD BARNICKOL III  
 ANTHONY ALBERT BAUM  
 LEWIS CHARLES BECKER  
 PETER JACOB BEREST  
 EDWARD JOSEPH BONAVILLA  
 WILLIAM P. BRANDON, JR.  
 ROBERT LAKE BUCKWALTER  
 JAMES STEVENSON CLARK III  
 MURRAY ALAN COHEN  
 STEPHEN M. COHEN  
 MATTHEW ALLEN CRENSON  
 LESTER ARTHUR DOLAK  
 WILLIAM LAURENCE GEBEL  
 ROBERT WOLF GLASNER  
 CORNELIUS LEE GROVE  
 WILLIAM MICHAEL GROVES  
 JOHN WILLIAM GUSTAITIS  
 ROBERT ARTHUR HERRMANN

ROBERT M. HUEBSCHMAN  
 MURRAY ALAN KATZ  
 STUART HARVEY LESSANS  
 MELVYN LOUIS LURIE  
 NELSON LEE MAX  
 THOMAS EDWARD McNAMARA  
 EDWARD LEWIS MORSE  
 PETER JOHN O'CONNELL  
 NICHOLAS GREENWOOD ONUF  
 HENRY MILLER PANCOAST  
 MARSHALL PLAUT  
 JOHN MOIR RAUENHORST  
 DAVID STEWART ROWE  
 STEPHEN JOHN SALCHENBERGER  
 CARL STANLEY SCHNEIDER  
 THOMAS SPENCE SMITH IV  
 ALAN LOWELL SORKIN  
 HERBERT MORRIS SWICK  
 JAMES WALTER TAYLOR  
 JOHN JAY WELTMAN  
 WENDYLL STANLEY WILSON

### *Graduating with Departmental Honors*

JOHN DAVID BALDWIN  
 KARL RICHARD BARNICKOL III  
 ROBERT LAKE BUCKWALTER  
 MATTHEW ALLEN CRENSON  
 LESTER ARTHUR DOLAK  
 WILLIAM MICHAEL GROVES  
 MELVYN LOUIS LURIE  
 NELSON LEE MAX

PETER JOHN O'CONNELL  
 WILLIAM RAYMOND O'NEILL  
 NICHOLAS GREENWOOD ONUF  
 HENRY MILLER PANCOAST  
 ETHAN ABBA SEIDEL  
 ALAN LOWELL SORKIN  
 JOHN JAY WELTMAN

## *BACHELORS OF ENGINEERING SCIENCE*

JOHN JOSEPH AMOSS, of Baltimore, Md.  
GEORGE HERBERT ASPLEN, of Church Creek, Md.  
JOHN BLOOMFIELD BEACH, of Washington, D. C.  
THEODORE ROBERT BLACK, of Baltimore, Md.  
RICHARD JOHN BLAKELY, of Wheaton, Md.  
HARRY CARL BORN, JR., of Baltimore, Md.  
NORMAN FREDERICK BRICKMAN, of Chevy Chase, Md.  
DONALD LEE BRISTOW, of Baltimore, Md.  
ULDIS BUIVA, of Baltimore, Md.  
MATTHEW O'CONNOR BURROUGHS, of Baltimore, Md.  
HOWARD ELLSWORTH BUTZ, JR., of Baltimore, Md.  
MICHAEL NORTH BYRNE, of Annapolis, Md.  
JAMES MICHAEL CARRIER, of Baltimore, Md.  
THEODORE WOOLSEY CHASE III, of Baltimore, Md.  
THOMAS MICHAEL CHURAN, of Silver Spring, Md.  
RONALD LEE CITRENBAUM, of Baltimore, Md.  
MARTIN LEWIS COHEN, of Baltimore, Md.  
SAUL JERRY COHN, of Baltimore, Md.  
JOHN HORINE DEAN, of Baltimore, Md.  
BRIAN JOSEF DESIND, of Baltimore, Md.  
PETER MUNSON DOW, of Alexandria, Va.  
WILLIAM PORTER DUNN, of Baltimore, Md.  
JOSEPH DENNIS DUNNE, of Baltimore, Md.  
WAYNE MELVIN DUTROW, of Baltimore, Md.  
PETER LAWRENCE FINK, of Mamaroneck, N. Y.  
ALFRED HOWARD FRANCE, JR., of Baltimore, Md.  
ADAMANDIOS GEORGE GAFOS, of Baltimore, Md.  
STEVE G. GILDEN, of Baltimore, Md.  
HOWARD STEWART GINSBERG, of Baltimore, Md.  
RONALD JOHN GOODWIN, of Baltimore, Md.  
JOHN McCAULEY GRAHAM, of Greenville, S. C.  
SHAUN EDWARD HARGEST, of Baltimore, Md.  
EDMUND GEORGE HENNEKE II, of Baltimore, Md.  
CHARLES MALCOLM HEVENOR, JR., of Washington, D. C.  
ROBERT RALPH HOMLAR, of Toledo, Ohio  
JOHN DAVID HOOVER, of Baltimore, Md.  
GARRETT ANTHONY HOPE, of Snow Hill, Md.  
HARVEY ALLEN HOROWITZ, of Baltimore, Md.  
NICHOLAS A. IOANNOU, of Baltimore, Md.  
DALE GILBERT IRELAND, of Baltimore, Md.  
GEORGE CLIFFORD JANZEN, of Baltimore, Md.  
RICHARD ARTHUR KANDLER, of Baltimore, Md.  
MARSHALL BARRY KRAMER, of Baltimore, Md.  
FREDERICK JAMES KUEHN, JR., of Schenectady, N. Y.  
BARRY KALMAN LEVEN, of Baltimore, Md.  
NORMAN CHRISTY MASON, JR., of Baltimore, Md.  
JAMES EDWARD McCLAIN, of Delmar, Md.  
MICHAEL DAVID MCPHERSON, of Aquasco, Md.  
STEPHEN MELLMAN, of Baltimore, Md.

EDWARD ELLWOOD MELLOTT, of Baltimore, Md.  
EDWIN ELLIOTT MENGEL, of Baltimore, Md.  
GERRY MILLER, of Baltimore, Md.  
MICHAEL HAROLD MINDEL, of Baltimore, Md.  
DAVID LEE MOHRE, of Baltimore, Md.  
JOHN ALBERT MORGAN, of Pittsburgh, Pa.  
GEORGE PHILIP MUELLER, of Baltimore, Md.  
RICHARD DONALD MULES, of Baltimore, Md.  
HOBART BENTON NOLL, JR., of Woodstock, Md.  
RICHARD MARION NORRIS II, of Lutherville, Md.  
EUGENE LEO PATRICK, of Reistertown, Md.  
ALEXANDER FRANK PETRLIK, of Elkridge, Md.  
FREDERICK LEON POFFENBERGER, of Hagerstown, Md.  
ROBERT G. PRICE, of Baltimore, Md.  
JOHN HARRIS PURNELL, of Berlin, Md.  
KENNETH LEONARD REIFSNIDER, of Keymar, Md.  
MARTIN JOHN REVILLE, JR., of Baltimore, Md.  
WAYNE ANTON RHODERICK, of Baltimore, Md.  
SAMUEL S. RIFMAN, of Baltimore, Md.  
A. LANDIS RILEY, of Denton, Md.  
OLIVER GEORGE ROTH, JR., of Baltimore, Md.  
ATHANASIOS CONSTANTINE SAITES, of Athens, Greece  
LOUIS FREDERICK SANDERS III, of Baltimore, Md.  
DONALD PARDEE SARLES, of Laurel, Md.  
JOHN STUART SCOLLARD, of Baltimore, Md.  
DONALD EDWARD SHAFFER, of Baltimore, Md.  
FREDERICK CHARLES SHANKLIN III, of Baltimore, Md.  
LIONEL RICHARD SHUTE, of Baltimore, Md.  
HOWARD MICHAEL SILVERMAN, of Baltimore, Md.  
THOMAS HADWICK SMITH, of Boise, Idaho  
THOMAS EDWARD SPATH, of Baltimore, Md.  
ALBERT MICHAEL SRAMEK, of Baltimore, Md.  
THOMAS PATRICK STANLEY, of Baltimore, Md.  
AUGUSTINE ALBERT STREJCEK, of Baltimore, Md.  
ROY FRED THORNTON, of Beltsville, Md.  
GERARD VERNON TRUNK, of Baltimore, Md.  
IRVIN MICHAEL TUCKER, of Baltimore, Md.  
WILLIAM ALVIN TYRRELL, of Darien, Conn.  
BENJAMIN ANDERSON WADE, of Hagerstown, Md.  
ALLAN P. J. WEBER, of Teaneck, N. J.  
DONALD LEE WEIGEL, of Ellicott City, Md.  
WILLIAM DAVID WERNER, of Baltimore, Md.  
JAMES BRUCE WILLIAMS, of Salisbury, Md.  
WILLIAM JAMES WOLF, JR., of Baltimore, Md.  
ANDREW CLIFTON WOODSON, JR., of Baltimore, Md.  
KENNETH KENJI YAGURA, of Los Angeles, Calif.

## *Graduating with Honors*

NORMAN FREDERICK BRICKMAN  
MARTIN LEWIS COHEN  
GERRY MILLER  
SAMUEL S. RIFMAN  
THOMAS HADWICK SMITH

THOMAS PATRICK STANLEY  
ROY FRED THORNTON  
GERARD VERNON TRUNK  
ALLAN P. J. WEBER

## *MASTERS OF SCIENCE IN ENGINEERING*

### *with titles of essays*

SERGIO ARCETTI G., of Caracas, Venezuela, Civil Engineer  
Catholic University, Venezuela, 1959. Sanitary Engineering and Water Resources.

The Effects of Iodine on the Development and Hatchability of *Ascaris Lumbricoides*.

JAGJIT SINGH BAKSHI, of Washington, D. C., B. A. Anglo Sanskrit College, Khanna, 1952; M. A. Government College, Ludhiana, 1955. Mechanics.

Some Methods to Find a Relationship between the Concentration of Oxygen in the Blood and Length of the Tube.

CORODON SCOTT CLARK, of West Henrietta, N. Y., B. S. Antioch College, 1961. Sanitary Engineering and Water Resources.

A Basic Study of Acid Mine Drainage Formation.

RICHARD MILTON DRAKE, of Harmans, Md., B. E. S. The Johns Hopkins University, 1958. Mechanics.

Thermoelectric Cooling Chamber.

OSCAR GEORGES FARAH, of Baltimore, Md., B. S. M. E. Purdue University, 1955; B. S. in Eng. The Johns Hopkins University, 1960. Electrical Engineering.

Study of Some Millimeter Wave Detectors.

JAMES LEWIS JENKINS, of Baltimore, Md., B. Sc. University of Cincinnati, 1953. Electrical Engineering.

An Optical Signal Processor.

KENNETH HARRISON KELLER, of Nissequogue, N. Y., A. B. Columbia University, 1956; B. S., 1957. Chemical Engineering.

The Structure of the Zone of Diffusion Controlled Reaction.

PAUL DONALD KELLY, of Baltimore, Md., B. S. A. E. Purdue University, 1959. Mechanics.

The Reacting Continuum.

PRISCILLA WARD KINGMAN, of Baltimore, Md. Mechanics.

The Effect of Specimen Diameter upon the Plastic Deformation of Aluminum in Compression.

WILLIAM JOHN KOOYMAN, of Wyoming, Ohio, B. S. Northwestern University, 1957. Chemical Engineering.

Hydrocarbon—Atomic Oxygen Flame Studies.

HOWARD WILLIAM LEBRUN, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1959. Electrical Engineering.

Light Modulation Techniques.

HERBERT MARK NEUSTADT, of Annapolis, Md., B. S. Massachusetts Institute of Technology, 1932. Electrical Engineering.

Transients in Wind Musical Instruments.

DAVID PEARCE POLLISON, of Maywood, N. J., B. S. Rutgers University, 1959. Sanitary Engineering and Water Resources.

A Study of Rainfall and Runoff Relationships on Gaged Inlet Areas.

HILDRETH MARTIN SANCHEZ, of St. Lucia, West Indies, B. Sc. Queen's University, Kingston, Canada, 1959. Sanitary Engineering and Water Resources.

Bactericidal Effect of Iodine and Chlorine in a Dual Role.

ANDREW VALDIS SILINSH, of Boston, Mass., B. E. S. The Johns Hopkins University, 1961. Electrical Engineering.

Survey of Linear Optimum Prediction and Smoothing Filters for Nonstationary Stochastic Processes.

AARON NATHAN SILVER, of New York, N. Y., B. E. E. Pratt Institute, 1955. Industrial Engineering.

A Simplified Automated Program Study in Fundamental Planning.



JOHN ALISTER WELCH, of Sydney, Australia. Mechanics

A Modified Lagrangian Co-ordinate System with Applications to the Exact Solutions of Steady Progressive Gravity Waves.

ARNOLD WILLIAM WILSON, of Port au Prince, Haiti, Civil Engineer, University of Haiti, 1949. Sanitary Engineering and Water Resources.

Biochemical Oxygen Demand and Carbon Dioxide Production in Aerated Sewage.

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## DOCTORS OF ENGINEERING

*with titles of dissertations*

SANT RAM ARORA, of New Delhi, India, B. S. Panjab University, 1951; M. A., 1954. Industrial Engineering.

Determination of Optimal Decision Parameters with Distribution Functions not Completely Known.

MICHAEL EDWARD BRENNER, of Somerset, N. J., B. S. in Bus. and Engr. Admin. Massachusetts Institute of Technology, 1957. Industrial Engineering.

Correlated and Selective Sampling Applied to the Simulation of Some Inventory Systems.

EDWARD EFFRON, of Baltimore, Md., Chemical Engineer, University of Cincinnati, 1953. Chemical Engineering.

Graphite Oxidation at Low Temperature.

WILLIAM CARL EPPERS, JR., of Aberdeen, Md., B. E. The Johns Hopkins University, 1950. Electrical Engineering.

Ion Energy Distribution at the Cathode of the Abnormal Glow Discharge.

GEORGE CLARK FRAZIER, JR., of Fredericksburg, Va., B. S. Virginia Polytechnic Institute, 1952; M. S. The Ohio State University, 1956. Chemical Engineering.

The Microstructure of a Hydrogen-Bromine Flame.

GEORGE MARTEL HIDY, of Boulder, Colorado, A. B. Columbia University, 1956; B. S., 1957; M. S. E. Princeton University, 1958. Chemical Engineering.

Vapor Condensation by Mixing in a Free Jet.

ROBERT NEWTON McDONOUGH, of Chaptico, Md., B. E. S. The Johns Hopkins University, 1956. Electrical Engineering.

Matched Exponents for the Representation of Signals.

HARRY DONALD MESSER, of Hagerstown, Md., B. S. New York University, 1952; M. S. Cornell University, 1954. Industrial Engineering.

Theoretical and Practical Solutions of a Class of Dynamic Inventory Models with No Constraints on Demand Distribution Structure.

ATTILIO JOSEPH RAINAL, of Baltimore, Md., B. S. in E. S. Pennsylvania State University, 1956; M. S. in E. E. Drexel Institute of Technology, 1959. Electrical Engineering.

Zero-Crossing Intervals of Random Processes.

ANDREAS RANNESTAD, of Oslo Norway, B. E. S. The Johns Hopkins University, 1959; M. S. E., 1961. Electrical Engineering.

Paramagnetic Relaxation in Dilute Potassium Ferri-cyanide.

ROBERT HENRY RICHARD, of Baltimore, Md., B. S. in E. E. Alabama Polytechnic Institute, 1950; M. S. Florida State University, 1951; M. S. E. The Johns Hopkins University, 1959. Electrical Engineering.

A Nonlinear Filter for Improvement of Signal Detectability in the Presence of Non-Gaussian Noise.

JAMES WARREN SMITH, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1956. Electrical Engineering.

The Detection of Multiple Unknown Signals by Adaptive Filters.

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## BACHELORS OF SCIENCE

ROSALIE SILBER ABRAMS, of Baltimore, Md.  
 FREDERICK ALONZO ALDEN III, of Baltimore, Md.  
 LORRAINE HANEY ASHLEY, of Baltimore, Md.  
 EUGENE SAMUEL BAILEY, Jr., of Towson, Md.  
 ROBERT LOFLIN BALDWIN III, of Havre de Grace, Md.  
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 GERTRUD MARIA BIRKHOLZ, of Baltimore, Md.  
 FRED EUDORUS BITTNER, of Glen Burnie, Md.  
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 ELIZABETH SHORT CISSEL, of Baltimore, Md.  
 HENRY WOODMAN CLARK, Jr., of Towson, Md.  
 WAYNE HAINES COLEMAN, of Dundalk, Md.  
 JOHN LEWIS CONTIC, of Baltimore, Md.  
 DONALD HENRY COOKE, of Baltimore, Md.  
 ERNEST CARRINGTON DAWSON, of Baltimore, Md.  
 DOROTHY WILSON DIEHL, of Baltimore, Md.  
 WILLIAM ALFORD DOBSON, Jr., of Baltimore, Md.  
 JULES DRESNER, of Baltimore, Md.  
 FLORENCE SMALL DRURY, of California, Md.  
 DANIEL MARTIN EDWARDS, of Baltimore, Md.  
 DAVID LEE EMBLETON, of Glen Burnie, Md.  
 ANTHONY CARMEN FIORELLO, of Baltimore, Md.  
 PAUL OLIVER FLAIM, of Baltimore, Md.  
 ELLEN BOWDEN FLETCHER, of Baltimore, Md.  
 RAYMOND FRANK FORTHUBER, of Baltimore, Md.  
 NORMAN JOHN FOSLER, of Baltimore, Md.  
 BARBARA FRANKEL, of Baltimore, Md.  
 ALBERT ARMAND FUSCO, of Harlingen, Texas  
 WILBUR CECIL GARNER, of Randallstown, Md.  
 PASCAL A. GIRARD, of Baltimore, Md.  
 ALLAN HOWARD GOLDMAN, of Baltimore, Md.  
 WILLIAM KENNETH HAHN, of Baltimore, Md.  
 JOYCE THORNTON HARLOW, of Towson, Md.  
 FRIEDA HERMINE HESPE, of Baltimore, Md.  
 HARRY ANSEL HESTER, Jr., of Baltimore, Md.  
 GERARD MAX HOF, of Baltimore, Md.  
 EDWARD JOHN HUBER, Jr., of Baltimore, Md.  
 EUGENE JOSEPH HUEGELMEYER, of Timonium, Md.  
 GLORIA BALDER KATZENBERG, of Baltimore, Md.

DAVID LEE KILCHENSTEIN, of Lutherville, Md.  
 JOHN PAUL KING, of Elkton, Md.  
 SONDRA LEE KOTZIN, of Annapolis, Md.  
 ELMER CHARLES KREISEL, Jr., of Baltimore, Md.  
 HOWARD GEORGE LENNON, of Westminster, Md.  
 DELTA NEVILLE GANTT LOHR, of Baltimore, Md.  
 URI MANDELBAUM, of Tel-Aviv, Israel  
 WILBERT STANLEY MANSBERGER, of Towson, Md.  
 SYLVIA TARLOW MARCUS, of Baltimore, Md.  
 JOHN MADDEN MATHY, of Baltimore, Md.  
 THOMAS JAMES McDONOUGH, of Baltimore, Md.  
 JOYCE PEARL BOWIE McLUCAS, of Baltimore, Md.  
 RICHARD JOSEPH MEHLING, of Baltimore, Md.  
 KENNETH LIONEL MINTZ, of Scranton, Pa.  
 GEORGE ALEXANDER MOHR, Jr., of Baltimore, Md.  
 JEANNETTE HARRISON MONTGOMERY, of Towson, Md.  
 MARY GRACE ANN MULVIHILL, of Baltimore, Md.  
 DAVID CHENAULT NASH, of Baltimore, Md.  
 LEONARD LEE PESIKIN, of Baltimore, Md.  
 G. GIBBS PETERSON, of Baltimore, Md.  
 ANTHONY THOMAS PEZZA, of Baltimore, Md.  
 OMAR VERNICE PULLIAM II, of Baltimore, Md.  
 EDWARD WARD RIEDEL, of Baltimore, Md.  
 JOHN BERNARD ROGALSKI, Sr., of Baltimore, Md.  
 WALTER HAROLD ROSKOTT, of Phoenix, Md.  
 ANDREW BARRY RUSNAK, of Baltimore, Md.  
 ISAAC KNIGHT RYAN, of Baltimore, Md.  
 ARTHUR ROMAN RYTERMAN, of Baltimore, Md.  
 LOUIS HAROLD SACKS, of Baltimore, Md.  
 SEYMOUR LAWRENCE SANDERS, of Baltimore, Md.  
 THOMAS WILLIAM SCHMIDT, of Baltimore, Md.  
 SYLVAN MYRON ELLIOT SHANE, of Baltimore, Md.  
 MARTIN IRVING SHEPS, of Baltimore, Md.  
 JOHN HAMILTON SHERWOOD, Jr., of Baltimore, Md.  
 PAUL DAVID SOWELL, of Baltimore, Md.  
 CAROL BRUBER STEINBERG, of Baltimore, Md.  
 JAMES WILMER STEVENS, Jr., of Baltimore, Md.  
 CHARLES BISHOP SULLIVAN, of Baltimore, Md.  
 EDWARD OTTO UHRIG, of Catonsville, Md.  
 HAROLD LAVERNE WARD, of Baltimore, Md.  
 CHARLES IRVING WILLEY, of Towson, Md.

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### *Graduating with Honors*

ROSALIE SILBER ABRAMS  
 PAUL OLIVER FLAIM  
 EUGENE JOSEPH HUEGELMEYER  
 SYLVIA TARLOW MARCUS

RICHARD JOSEPH MEHLING  
 LEONARD LEE PESHKIN  
 EDWARD WARD RIEDEL

## BACHELORS OF SCIENCE IN NURSING

NELLIE-POLK WARFIELD DORSEY, of Sykesville, Md.  
CAROL ANNE FRIEDLEIN, of Baltimore, Md.  
SHIRLEY LOUISE HALL, of Hebron, Ohio  
ALYCE ANN LALLMAN, of Hooper, Nebr.  
JOANNE ADELE PACE MCLEES, of Baltimore, Md.  
CAROL E. NEWTON, of Philadelphia, Pa.

DOROTHY ANN NOE, of New York, N. Y.  
KATE READ SCILIPOTI, of Towaco, N. J.  
CATHERINE SMITH SHINDLE, of Waynesboro, Pa.  
BEVERLY LYNNE STONAKER, of Pittsburgh, Pa.  
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## BACHELORS OF SCIENCE IN ENGINEERING

KENNETH WATTS BAILEY, of Baltimore, Md.  
STEPHEN DANIEL BANDY, of Baltimore, Md.  
PHILIP ANTHONY BELLI, of Baltimore, Md.  
THOMAS MARTIN BRAY, of Timonium, Md.  
EDWIN CHARLES BRODKA, of Baltimore, Md.  
JOSEPH BATES BURK, of Baltimore, Md.  
WILLIAM GUY CHRISTOFORO, of Cockeysville, Md.  
JOSEPH CIAVOLELLA, of Baltimore, Md.  
JOSEPH Z. COOPER, of Baltimore, Md.  
CHARLES EDGAR CRAVEN III, of Baltimore, Md.  
CHARLES WILLIAM DEIGERT, of Baltimore, Md.  
HARRY MAURICE DILLOW, of Baltimore, Md.  
GEORGE HENRY DUVAL, JR., of Baltimore, Md.  
EUGENE EISENMANN, JR., of Baltimore, Md.  
JOHN FRANCIS ETZEL, of Towson, Md.  
ANDREW BIDDLE FADELEY, of Baltimore, Md.  
SAMUEL PHILLIP FRAMM, of Baltimore, Md.  
KURT WILLIAM FRITZE, of Baltimore, Md.  
HERBERT MONROE GAGE, of Baltimore, Md.  
ARTHUR HAWKSWORTH, of Baltimore, Md.  
ROY EDWARD HEANEY, of Silver Spring, Md.  
DONALD EDWARD HENNIGAN, of Baltimore, Md.  
ADONIRAM CADWELL HIEBERT, of Randallstown, Md.  
ROBERT OTTO HOFFMAN, of Baltimore, Md.  
WALTER LEROY HOFMEISTER, JR., of Baltimore, Md.  
WILLIAM STUART HOMMERBOCKER, JR., of Severna Park, Md.  
JAMES THOMAS HUDGINS, JR., of Randallstown, Md.  
ANDREW JACKSON III, of Timonium, Md.  
WILLIAM NELSON JENSEN, of Baltimore, Md.  
STANLEY W. KALISZEWSKI, of Waterbury, Conn.  
THOMAS IRVIN KAUFFMAN, of Severna Park, Md.  
CHARLES FRANCIS LAMBERT, of Baltimore, Md.  
HOWARD WAYNE LEHEM, of Baltimore, Md.  
ROBERT OGLE LINK, of Baltimore, Md.  
VERNON JOSEPH LOCKS, JR., of Baltimore, Md.  
EDWARD FRANCIS MEINECKE, of Baltimore, Md.  
ROBERT PAUL MELOCIK, of Baltimore, Md.  
ANTHONY THOMAS MIGLIORE, of Baltimore, Md.  
GEORGE ROBERTSON MILLER, of Towson, Md.  
THOMAS PRICE MULLINIX, of Baltimore, Md.

EARL KENNETH MUNZER, of Baltimore, Md.  
TIRUNILAKUDDI K. NATARAJAN, of Madras, India  
WILLIAM JOHN NAUMAN, of Baltimore, Md.  
ANDREW JOHN PANUSKA, of Baltimore, Md.  
GEORGE EDWARD PETTS III, of Annapolis, Md.  
HERBERT ROBERT PLITT, of Baltimore, Md.  
BARRY MICHAEL POTEAT, of Baltimore, Md.  
WALTER FREDERICK POWERS, of Takoma Park, Md.  
PATRICK O'NEILL PRENDERGAST, of Glen Burnie, Md.  
EDWARD MEREDITH PRESNELL, of Glen Burnie, Md.  
THOMAS EDWARD QUADE, of Linthicum, Md.  
DORN ARWIN QUESINBERRY, of Baltimore, Md.  
JOHN WILLIAM RAKOWSKI, of Baltimore, Md.  
ALVIN RICHMOND, of Baltimore, Md.  
DENNIS WALSH RUARK, of Towson, Md.  
WALTER EDWARD RUCHINSKY, of Englewood, Colo.  
ROBERT KASPER RUZICKA, of Baltimore, Md.  
KEITH RICHARD SCHREIBER, of Baltimore, Md.  
RALPH JAMES SECOURA, of Baltimore, Md.  
HARRIS WILLIAM SHALOWITZ, of Baltimore, Md.  
RONALD LEON SHAPIRO, of Baltimore, Md.  
WILLIAM GORDON SHIPLEY, of Baltimore, Md.  
RAYMOND ALAN SMITH, of Severna Park, Md.  
JOHN ARTHUR SPARKS, of Augusta, Ark.  
MICHAEL PAUL SQUIRES, of Baltimore, Md.  
MORRIS TANNENBAUM, of Baltimore, Md.  
ROBERT JOSEPH TAYLOR, of Baltimore, Md.  
ROGER KIRKBRIDE TAYLOR, JR., of Towson, Md.  
WALTER JOSEPH TAYLOR, of Baltimore, Md.  
FRANK HOWARD TIGHE, JR., of Baltimore, Md.  
DONALD LEE VAN PELT, of Baltimore, Md.  
JOSEPH MARCUS VON SAS, of Baltimore, Md.  
JOHN CALVIN WALLACE, of Baltimore, Md.  
NATHAN PERRY WEINSTEIN, of Baltimore, Md.  
STANLEY JOSEPH WHELAN, of Baltimore, Md.  
JAMES GARDNER WOODWARD, of Baltimore, Md.  
WILLIAM WATKINS WOTELL, of Baltimore, Md.  
SAMUEL JUDE WRIGHT, of Baltimore, Md.  
CHARLES NEVIN YOUNG, of Baltimore, Md.

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### *Graduating with Honors*

KENNETH WATTS BAILEY  
JOSEPH CIAVOLELLA  
JOSEPH Z. COOPER  
EDWARD FRANCIS MEINECKE

DENNIS WALSH RUARK  
WILLIAM GORDON SHIPLEY  
ROBERT JOSEPH TAYLOR

## *MASTERS OF SCIENCE IN ENGINEERING*

*in McCoy College  
with titles of essays*

HERMAN JAY BLINCHIKOFF, of Baltimore, Md., B. S. in Eng.  
The Johns Hopkins University, 1959. Electrical Engineering.

Analysis of Toroidal Inductors.

RICHARD CARLTON CRUTCHFIELD, JR., of Baltimore, Md.,  
B. E. S. The Johns Hopkins University, 1957. Electrical Engineering.

Analysis of Non-uniformly Spaced Antenna Arrays.

HANS SIGMUND GRUENBERGER, of Towson, Md., C. E. Technical  
University of Norway, 1952. Electrical Engineering.

Analysis of Electrical Circuits with a Periodically Varying  
Parameter.

RAYMOND GERALD MARTIN, of Baltimore, Md., B. S. (Eng.)  
Imperial College, University of London, 1945. Electrical Engineering.

Transient Suppression in Silicon Rectifier Circuits.

ROBERT IRWIN MILLAR, JR., of Baltimore, Md., B. E. E.  
Clarkson College of Technology, 1955. Electrical Engineering.

Monopulse Techniques for Phased Array Radars.

JAMES KERR SKILLING, of West Acton, Mass., B. S. University  
of California, 1953. Electrical Engineering.

Large Signal Characterization of Transistors by Charge  
Control Parameters.

WILLIAM KENNETH SONES, of Baltimore, Md., B. Sc. Brighton  
Technical College, England, 1953. Electrical Engineering.

The Theory and Design of Low Noise, Small Signal  
Distributed Amplifiers.

THEODORE HERBERT YAFFE, of Baltimore, Md., B. E. E.  
Cornell University, 1949. Electrical Engineering.

Analysis and Practical Circuits for Varactor Harmonic  
Generators.

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## *MASTER OF SCIENCE*

*in McCoy College  
with title of essay*

JOSEPH ANTHONY MUSCARI, JR., of Baltimore, Md., B. S.  
Beloit College, 1957. Physics.

Construction and Calibration of an Anti-Compton  
Spectrometer.

(1)

## *MASTERS OF EDUCATION*

JEAN ELIZABETH ARNOLD, of Pikesville, Md., B. S. State  
Teachers College, Towson, Md., 1955.

JANE BARRATT BALFOUR, of Baltimore, Md., B. S. The Johns  
Hopkins University, 1959.

ELIZABETH LYNN BENNETT, of Catonsville, Md., B. A. University  
of Maryland, 1934.

MARGARET HOLLOWAY BEVAN, of Glen Burnie, Md., A. B.  
University of Michigan, 1951.

JOYCE E. DYER BILGRAVE, of Baltimore, Md., B. A. Sul Ross  
State College, Texas, 1949.

ELINOR JEANNE BARTHOLOMEW BOWMAN, of Baltimore, Md.,  
B. S. American University, 1951.

WILLIAM GILMER BOWYER, of Annapolis, Md., B. S. United  
States Military Academy, 1929; B. A. St. Mary's University  
of San Antonio, 1930; M. A. 1939.

GEORGE SNYDER BROWN, of Baltimore, Md., Ph. B. Loyola  
College, 1955.

JOHN WILSON DAY, of Bel Air, Md., B. S. in Ed. State  
Teachers College, Salisbury, Md., 1952.



- JOYCE P. DI DOMENICO, of Baltimore, Md., B. S. The Johns Hopkins University, 1938.
- WILLIAM DITTO ELLIOTT, of Reisterstown, Md., B. S. State Teachers College, Shippensburg, Pa., 1957.
- MARY-WEST PITTS ENSOR, of Reisterstown, Md., A. B. Western Maryland College, 1957.
- JOHN CHRISTOPHER FIEGE, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1957.
- KATHARINE WHITBY FIEGE, of Baltimore, Md., B. A. West-hampton College, 1959.
- HERSH MOSES GALINSKY, of Baltimore, Md., B. A. Yeshiva College, 1955.
- NONA LEE GIESE, of Baltimore, Md., B. S. The Johns Hopkins University, 1959.
- MARY JEAN GRANT GRAY, of Edgewater, Md., B. S. Howard University, 1956.
- ALICE LINDEMAN KEMPNER, of Baltimore, Md., A. B. Hunter College of the City of New York, 1944.
- DAWN FOLK KIDD, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1955.
- DEIRDRE DUFF KILDOW, of Pikesville, Md., A. B. Oberlin College, 1954.
- VICTOR BERNARD KOTULAK, of Baltimore, Md., A. B. Wilkes College, 1951.
- VIRGINIA LEE KREMER LEVIN, of Baltimore, Md., A. B. Goucher College, 1944.
- DONALD HORAN LOTZ, of Owings Mills, Md., A. B. Western Maryland College, 1958.
- ANNE BRINKLEY MORGAN, of Baltimore, Md., B. A. Lynch-burg College, 1952.
- JOHN FREDERICK NEIDECKER, of Baltimore, Md., B. Sc. in Ed. The Ohio State University, 1950.
- PEGGY CRUMP NOTTINGHAM, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1947.
- PRUDENCE SMITH PETRAKIS, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1959.
- MARY PATRICIA POWERS, of Baltimore, Md., B. S. University of Maryland, 1946.
- LOUISE SCHARPF RESTIVO, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1950.
- ZERITA LEOLA SKATES, of Baltimore, Md., B. S. Elem. Ed. Coppin State Teachers College, 1948.
- TEMA RUTH SUSSMAN SMEYNE, of Baltimore, Md., B. A. University of Maryland, 1960.
- FULLER CAMPBELL STRAWBRIDGE, of Catonsville, Md., B. A. The Johns Hopkins University, 1950.
- ANNIE ROSS THOMPSON, of Baltimore, Md., B. S. Morgan State College, 1947.
- GRACE HELEN CADDEN TUCHOLKA, of Baltimore, Md., B. S. The Johns Hopkins University, 1936.
- JULIEN H. TURK, of Pikesville, Md., B. S. The Johns Hopkins University, 1940.
- CAPRICE MONICA UHLHORN, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1958.
- RUTH ANNE NAGLE WATKINS, of Baltimore, Md., Ed. B. Uni-versity of California, Los Angeles, 1931.
- MILDRED HAMENT WAXMAN, of Baltimore, Md., B. S. The Johns Hopkins University, 1944.
- DONALD KEITH WHITEHURST, of Berlin, Md., B. S. State Teachers College, Towson, Md., 1956.
- BETTY WILLIAMS, of Baltimore, Md., A. B. Morgan State College, 1944.
- FRANCES MURPHY WOOD, of Baltimore, Md., B. A. University of Wisconsin, 1944; B. S. Coppin State Teachers College, 1958.

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## *CERTIFICATES OF ADVANCED STUDY IN EDUCATION*

- LILLIAN FREY DEXTER, of Baltimore, Md., A. B. Western Maryland College, 1934; M. A. Pennsylvania State Uni-versity, 1942.
- ANNIE VIOLA GITTINGS, of Baltimore, Md., B. S. Morgan State College, 1946; M. A. New York University, 1955.
- MIRIAM DAVIS GREEN, of Baltimore, Md., A. B. University of Tampa, 1944; M. Ed. Goucher College, 1957.
- SHIRLEY ABRAMS MILLER, of Baltimore, Md., A. B. Hunter College, 1939; M. P. Adm. New York University, 1948.
- FRANK RICHARD OLENCHAK, of Timonium, Md., B. M. Madison College, 1950; M. Ed. The Pennsylvania State University, 1957.
- ARMAND MORRIS OPITZ, of Baltimore, Md., B. A. The Johns Hopkins University, 1958; M. A. T., 1959.



REYNOLD D. PAGANELLI, of Timonium, Md., B. S. State Teachers College, Bloomsburg, Pa., 1943; M. A. Catholic University of America, 1949.

EVELYN RUTH PEARL REED, of Linthicum Heights, Md., B. S. State Teachers College, Towson, Md., 1945; M. Ed. University of Maryland, 1950.

RAYMOND HIBBERD SMITH, of Timonium, Md., B. S. in Ph. Rhode Island College of Pharmacy, 1940; M. Ed. The Johns Hopkins University, 1961.

ROSEMARIE WALLACE, of Baltimore, Md., B. S. State Teachers College, Towson, Md., 1951; M. Ed. The Johns Hopkins University, 1957.

DORIS MARGARET WALTERS, of Sykesville, Md., B. S. State Teachers College, Towson, Md., 1954; M. A. Teachers College, Columbia, 1958.

DONALD LEE WEST, of Baltimore, Md., A. B. Lincoln Memorial University, 1929; M. A. Oglethorpe University, 1944.

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## MASTERS OF SCIENCE

*in the School of Hygiene and Public Health*

*with titles of theses*

ELIZABETH EDITH HORN, of Baltimore, Md., B. A. Russell Sage College, 1960. Biochemistry.

The Mutagenic Action of Nitrous Acid on *Hemophilus Influenzae* Transforming DNA.

DEAN PAUL OWENS, of Staten Island, N. Y., B. A. Duke University, 1956; M. S. in Ed. Wagner College, 1960. Pathobiology.

A Study in the Comparative Pathology of a Specific

Viral Infection for Salmonidae in Trout and Goldfish Primary Explant Culture.

K. KATHLEEN SUBRAHMANIAM, of Baltimore, Md., B. S. Muskingum College, 1960. Biostatistics.

An Analysis of the Age Distributions at Death of Mice Exposed to Gamma Radiation.

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## DOCTORS OF SCIENCE

*in the School of Hygiene and Public Health*

*with titles of theses*

E. EVELYN BRITT, of Los Angeles, Calif., B. S. Los Angeles State College of Applied Arts and Sciences, 1957. Environmental Medicine (Audiology and Speech).

Hearing and Language Development in Infancy.

GREGORIO DIESTRO SAMSON, of Quezon City, Republic of the Philippines, B. S. in Industrial Chemistry, University of the Philippines, 1938; M. P. H. University of Pittsburgh, 1957. Biochemistry.

Interrelationship of Vitamin B<sub>6</sub> and Dietary Amino Acid Composition in the Development of Proteinuria and Anemia in Rats.

MANOHAR VITHALRAO SHIRODKAR, of Bombay, India, B. A. The Johns Hopkins University, 1958. Pathobiology.

The Blocking Effect of West Nile Virus on the Development of Rous Sarcoma in Chickens.

EDWARD MURRAY SMITH, of Bethesda, Md., B. E. S. The Johns Hopkins University, 1959; M. S. E., 1960. Radiological Science.

Determination of Protein-Bound Iodine (PBI) in Human Plasma by Thermal Neutron Activation Analysis.

GEORGE TREVOR WILLIAMS, of Ellicott City, Md., A. B. Harvard University, 1949. Biostatistics.

Stochastic Model for Incubation Periods in Infectious Diseases.

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## *MASTERS OF PUBLIC HEALTH*

- SAFIA IKRAM AMEEN, of Lahore, Pakistan, M. B. B. S. The University of the Panjab, 1955.
- DRAGANA ANDJELKOVIC, of Belgrade, Yugoslavia, M. D. University of Belgrade, 1958.
- SUDHIR CHANDRA BAGCHI, of Mahanagar, India, M. B. B. S. University of Lucknow, 1939; D. P. H. Calcutta University, 1948; M. D. University of Lucknow, 1961.
- YILMAZ BAYKAL, of Ankara, Turkey, M. D. University of Istanbul, 1954.
- EVELYN MARGARET BEDARD, of Worcester, Mass., B. S. New York University, 1956.
- TEODORO BLANCO, of Caracas, Venezuela, B. C. E. University of Costa Rica, 1947.
- JOHN WESTBY CASPERSEN, of Venice, Fla., A. B. Brown University, 1950; M. D. Temple University, 1959.
- JOSEPH R. CATALDO, of Charlestown, Mass., A. B. Harvard University, 1953; M. D. Boston University, 1958.
- ANNEMARIE FEIBES CROCKETT, of Baltimore, Md., A. B. Manhattanville College of the Sacred Heart, 1940.
- ROBERT LEE DAMM, of Glen Burnie, Md., B. S. University of Maryland, 1954; M. D., 1958.
- FREDRIK L. O. DECK, of Geneva, Switzerland, Medicine Kandidat Caroline Medico-Surgical Institute, Sweden, 1950.
- DRAGOLJUB V. DJORDJEVIC, of Belgrade, Yugoslavia, M. D. University of Belgrade, 1952.
- FREDRIC F. DOPPELT, of New York, N. Y., M. D. State University of New York, 1956.
- CHANNING LESTER EWING, of Weir, Fla., M. D. Medical College of Virginia, 1952.
- WILLIAM FRITZ, of Onancock, Va., M. D. University of Cincinnati, 1949.
- SUNG-BONG HONG, of Seoul, Korea, M. D. Seoul National University, 1950; Dr. M. Sc. Yamaguchi Medical College, Japan, 1961.
- PAUL D. IMRE, of Baltimore, Md., B. S. University of Illinois, 1950; M. A. New York University, 1951.
- A. I. M. MAFAKHKHARUL ISLAM, of Mymensingh, Pakistan, M. B. B. S. University of Dacca, 1959.
- OTIS W. JONES, of Hoboken, Ga., B. S. The University of Georgia, 1959; M. D. Medical College of Georgia, 1959.
- JAMES WALCOTT JUSTICE, of Baltimore, Md., B. A. Bucknell University, 1954; M. D. New York Medical College, 1958.
- JAMES ERNEST KELLY, of Baltimore, Md., D. D. S. Loyola University, Louisiana, 1947.
- GEORGE PAUL KENYON, of Coudersport, Pa., B. S. Kent State University, 1950; M. D. The University of Rochester, 1955.
- JOUNG SOON KIM, of Seoul, Korea, M. D. Seoul National University, 1960.
- MICHEL F. LECHAT, of Baltimore, Md., M. D. Catholic University of Louvain, 1952.
- BETTY JEAN LEWIS, of Lakewood, Ill., B. S. University of California, 1951.
- CECILIA JOHNSTON LINK, of Fort Myers, Fla.
- GINES ANTONIO MARTINEZ ZAYAS, of La Merced, Puerto Rico, B. S. University of Puerto Rico, 1953; M. D., 1957.
- ROBERT E. MATEJKA, of Dallas, Tex., B. A. Hardin-Simmons University, 1951; M. D. University of Texas, 1955.
- GEORGIA MERRILL, of Baltimore, Md., B. S. N. The Catholic University of America, 1959.
- JOHN RICHARD MOLEND, of Baltimore, Md., B. S. University of Scranton, 1952; M. S. Utah State University, 1957.
- ALVARO NICOLAS Y GALLARDO, of Quezon City, Republic of the Philippines, M. D. University of the Philippines, 1938.
- JOE NIIYA, of Tokyo, Japan, M. D. Jikei University, Japan, 1947.
- MARION R. PETERS, of Brooklyn, N. Y., B. S. (Nursing) St. John's University, New York, 1962.
- MICHAEL K. REES, of Richmond, Va., M. D. Medical College of Virginia, 1959.
- RICHARD RAOUL RIGLER, of Baltimore, Md., M. D. Peter Pazmany University of Budapest, 1942.
- BENJAMIN ROJAS PACHECO, of Cali, Colombia, M. D. National University of Colombia, 1946.
- ANNIK ANNE-MARIE ROUILLON, of Paris, France, M. D. University of Paris, 1955.
- ELIZABETH SAGER SHARP, of Stamford, Conn., B. S. in Nursing University of Michigan, 1956; M. S. in Nursing Yale University, 1959.
- TEJ LAL SHRESTHA, of Katmandu, Nepal, M. B. B. S. University of Calcutta, 1960.

BARBARA STARFIELD-HOLTZMAN, of Baltimore, Md., B. A. Swarthmore College, 1954; M. D. State University of New York, 1959.

VICTOR ZAMMIT TABONA, of Geneva, Switzerland, M. D. The Royal University of Malta, 1940.

MALCOLM TENNEY, JR., of Amherst, Va., B. A. Washington and Lee University, 1949; M. A. Columbia University, 1952; M. D. Medical College of Virginia, 1959.

INDER JIT SINGH THIND, of Chandigarh, India, M. B. B. S. Panjab University, 1960.

BATUL TURABI, of Karachi, Pakistan, M. B. B. S. University of Karachi, 1959.

JAMES E. TURNS, of Benion, Ill., M. D. University of Illinois, 1955.

NINA BENCICH WOODSIDE, of Haymarket, Va., B. S. The George Washington University, 1953; M. D. Woman's Medical College of Pennsylvania, 1957.

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## DOCTORS OF PUBLIC HEALTH

*with titles of theses*

LIEN PING CHOW, of Keelung City, Taiwan, M. D. Taihoku Imperial University, Taiwan, 1945; D. P. H. University of Sydney, 1957; Dr. M. Sc. Kagoshima Medical College, Japan, 1960. Maternal and Child Health.

Studies on the Registration of Births and Infant Deaths in Taiwan.

ALFONSE THOMAS MASI, of Baltimore, Md., B. S. The City College of New York, 1951; M. D. Columbia University, 1955; M. P. H. The Johns Hopkins University, 1961. Epidemiology.

A Community-Wide Hospital Survey of Hashimoto's Disease.

KEERTI V. SHAH, of Atul, India, M. B. B. S. Poona University, 1951; M. P. H. The Johns Hopkins University, 1957. Pathobiology.

Studies toward the Development of a Vaccine against Kyasanur Forest Disease.

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## MASTERS OF ARTS

*in The School of Advanced International Studies*

ROBERT COLTON BELL, of Rochester, N. Y., B. A. Tufts University, 1961.

PETER J. BERTOCCI, of Arlington, Mass., B. A. Bates College, 1960.

ANTONIE QUIRINUS BEUMER, of Amsterdam, Holland, A. B. Harvard University, 1961.

SHIRLEY S. BOCHNER, of Jersey City, N. J., A. B. Cornell University, 1961.

PETER C. BORRÉ, JR., of Rome, Italy, A. B. Harvard University, 1959.

CHARLES ALLEN BUCHANAN, JR., of Washington, D. C., B. S. United States Naval Academy, 1956.

SHEILA RAY BUCKLEY, of Los Angeles, Calif., B. A. Pomona College, 1961.

WILLIAM ELLIOTT BUTLER II, of Hibbing, Minn., B. A. American University, 1961.

ROBERTA JANE COHEN, of New York, N. Y., B. A. Barnard College, 1960.

LEWIS HURT DIUGUID, of Baltimore, Md., B. A. Virginia Military Institute, 1957.

EDWARD BLISS ELDRIDGE, of Essex County, N. Y., A. B. Harvard University, 1961.

WILMOT ALFRED FRASER, of Charleston, S. C., B. A. Howard University, 1961.

LAWRENCE S. FREUND, of New York, N. Y., A. B. Queens College, 1961.

GEORGE WALLACE GRAYSON, JR., of Alexandria, Va., B. A. University of North Carolina, 1960.

MARSTON DEAN HODGIN, of Oxford, Ohio, A. B. Miami University, 1960.

BROOKE CARLTON HOLMES, of San Gabriel, Calif., B. A. Pomona College, 1961.



- BARBARA ANN HUDDLESTON, of Canton, N. Y., B. A. College of Wooster, 1961.
- FRED A. KAHN, of Baltimore, Md., B. A. University of Maryland, 1960.
- GEORGE DOUGLAS KRUMBHAAR, JR., of Princeton, Mass., A. B. Harvard University, 1958.
- DING-WU KUO, of Miaoli, Taiwan, B. A. Taiwan Provincial College of Law and Commerce, 1955.
- MICHAEL FORBES LARRATT, of West Hartford, Conn., B. A. Brown University, 1958.
- STEPHEN OLIVER LESSER, of Los Angeles, Calif., B. A. University of California, Los Angeles, 1961.
- ARTHUR D. LEWIS, JR., of Canton, Ohio, B. A. Miami University, 1961.
- DAVID EDSON LOCKWOOD, of Milton, Mass., A. B. Oberlin College, 1958.
- ANDREW MACKECHNIE, of Summit, N. J., A. B. Williams College, 1961.
- ROBERT KNIGHT MEAHL, of Winchester, Mass., A. B. Harvard University, 1961.
- SUSAN RHODA MILLS, of Gloversville, N. Y., A. B. Cornell University, 1961.
- TULLIO OSTI, of Ferrara, Italy, B. A. University of Bologna, 1961.
- ENRICO PEDACCHIA, of Terni, Italy, B. A. University of Rome, 1958.
- ROBERT ALFRED PELLATON, of Tarrytown, N. Y., B. A. Yale University, 1959.
- SAMUEL SHELLABARGER REA, of Pittsburgh, Pa., A. B. Princeton University, 1961.
- NICHOLAS ANDREW REY, of Downingtown, Pa., A. B. Princeton University, 1960.
- MARILOU M. RIGHINI, of Washington, D. C., B. A. Michigan State University, 1958.
- CLAUDIO SCAETTA, of Rome, Italy, B. A. University of North Carolina, 1961.
- GEORGE WARREN SCHUYLER, of Syracuse, N. Y., B. A. Yale University, 1957.
- KATHERINE ANN SIEMSSSEN, of Alexandria, Minn., B. A. Marquette University, 1960.
- JOHN VLADIMIR STOROJEV, of Sea Cliff, N. Y., B. A. New York University, 1961.
- HERSCHELLE SANDRA SULLIVAN, of Pittsburgh, Pa., A. B. Spelman College, 1961.
- THOMAS RONALD SYKES, of Morris, Ill., B. A. University of Illinois, 1961.
- GORDON A. TUBBS, of Ithaca, N. Y., B. A. Ithaca College, 1959.
- KUSOL VAROPHAS, of Bangkok, Thailand, B. S. F. S. Georgetown University, 1961.
- CHARLES ELBRIDGE WATERMAN, of Marblehead, Mass., B. A. Brown University, 1959.
- DAVID S. WILSON, of Malibu, Calif., B. A. Stanford University, 1961.
- MOORHEAD WRIGHT III, of Mt. Kisco, N. Y., A. B. Princeton University, 1956.

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## *DOCTORS OF MEDICINE*

- HEWES DEMUTH AGNEW, of Pittsburgh, Pa., A. B. Princeton University, 1958.
- EDWIN LOUIS ALDERMAN, of Rochester, N. Y., B. A. University of Rochester, 1958.
- GARY WILLIAM ARCHER, of North Hollywood, Calif., A. B. University of California, Santa Barbara, 1959.
- JAMES IVAN AUSMAN, of Milwaukee, Wis., B. S. Tufts University, 1959.
- ROSS JOHN BALDESSARINI, of North Adams, Mass., A. B. Williams College, 1959.
- GERALD ANTHONY BAUGH, of Austin, Texas, B. S. University of Notre Dame, 1959.
- PAUL BERSON, of Great Neck, N. Y., A. B. Drew University, 1959.
- ROBERT DAVID BRICKMAN, of Chagrin Falls, Ohio, A. B. Princeton University, 1959.
- WALLACE MICHAEL BRYANT, of Dover, Del., B. A. University of Delaware, 1959.
- EDWARD GEORGE BUCK, JR., of Kensington, Md., B. A. University of Washington, 1959.
- PETER GEORGE BURCH, of Belmont, Mass., A. B. Princeton University, 1959.
- WILLIAM BRANTLEY BURNS, JR., of Atlanta, Ga., B. S. Davidson College, 1959.



- WINSTON PAULDING CAINE, JR., of Chattanooga, Tenn., B. A. Vanderbilt University, 1959.
- JOHN BEALE HOWARD CALDWELL, of Louisville, Ky., B. S. Davidson College, 1959.
- DONALD LEONARD CARESS, of Brooklyn, N. Y., A. B. Dartmouth College, 1960.
- DAVID CHI-HOY CHAI, of Honolulu, Hawaii, B. A. Haverford College, 1959.
- BENJAMIN ROBERT CHIPMAN, of Baltimore, Md., B. A. The Johns Hopkins University, 1959.
- DAVID RAY COBLENTZ, of Las Vegas, Nev., B. A. University of California, Los Angeles, 1959.
- JOSEPH DONALD COONROD, of Richmond, Ind., A. B. Earlham College, 1959.
- ARIS WELLINGTON COX, of Helena, Ark., B. A. Vanderbilt University, 1959.
- JAMES LEWIS CROSTHWAITE, of Drew, Miss., B. A. University of Mississippi, 1959.
- ROBERT VICTOR DEROSSI, of New York, N. Y., A. B. Columbia University, 1959.
- JOHN ELWOOD DOUGLAS, of Greenville, N. C., A. B. Oberlin College, 1959.
- FRANCIS CHRISTOPHER DUNN, JR., of Cedar Rapids, Iowa, B. A. University of Pennsylvania, 1959.
- EDWARD RANDOLPH EICHNER, of Houston, Texas, A. B. Baylor University, 1959.
- LARRY EUGENE FLEISCHMANN, of Saginaw, Mich., B. S. University of Detroit, 1959.
- EDUARD GEORG FRIEDRICH, JR., of Evanston, Ill., H. A. B. Xavier University, 1959.
- STUART LOUIS FULD, of Baltimore, Md., A. B. Dartmouth College, 1959.
- DAVID GOLDFARB, of Rutherford, N. J., B. A. The Johns Hopkins University, 1959.
- RICHARD JAY GREENE, of Passaic, N. J., B. A. The Johns Hopkins University, 1959.
- STEFANIE KRAININ GREENE, of Riverdale, N. Y., B. S. University of Chicago, 1959.
- GEORGE HOWARD GREIDINGER, of Brooklyn, N. Y., B. A. The Johns Hopkins University, 1959.
- JAMES EDWARD GUINANE, of Oak Park, Ill., A. B. Brown University, 1953; M. S. California Institute of Technology, 1954.
- BRUCE JAY HASKIN, of Philadelphia, Pa., B. A. University of Pennsylvania, 1959.
- JOHN MATTHEW HAVLINA, JR., of Orinda, Calif., A. B. University of California, Berkeley, 1959.
- WILLIAM DAVID HEIZER, of Rawlins, Va., A. B. King College, 1958.
- CHRISTOPHER JONAS HELLER, of Washington, D. C., A. B. Princeton University, 1959.
- STEVEN RICHARD HIRSCH, of Chicago, Ill., B. A. Amherst College, 1959.
- MORRISON HODGES, of Newport, Ark., A. B. Princeton University, 1958.
- JOHN HARLAN HORNBAKER, JR., of Hagerstown, Md., B. A. Haverford College, 1959.
- RUFUS BRIDGES JENNINGS, JR., of Mobile, Ala., B. A. Florida State University, 1959.
- JO HAROLD JOHNSON, of Simpsonville, S. C., B. S. University of South Carolina, 1961.
- RICHARD ALLEN JOHNSON, of Frostburg, Md., A. B. Princeton University, 1959.
- DANIEL BRENT KOOYMAN, of Cincinnati, Ohio, B. A. Oberlin College, 1959.
- ROBERT LEE KRIEL, of Baltimore, Md., B. S. Haverford College, 1959.
- PAUL KRIJGER, of Groton, S. D., B. A. University of Minnesota, 1959.
- SAMUEL ROBERT LATHAN, of Chester, S. C., B. S. Davidson College, 1959.
- EDWARD RAYMOND LAWS, of Hollywood, Fla., A. B. Princeton University, 1959.
- ROBERT PAUL LIBERMAN, of Newark, N. J., A. B. Dartmouth College, 1959; M. S. University of California, San Francisco, 1961.
- DEAN HORACE LOCKWOOD, of Schenectady, N. Y., B. A. Wesleyan University, 1959.
- GERALD LEE LOONEY, of Bluefield, W. Va., B. A. The Johns Hopkins University, 1959.
- CHARLES O'DONOVAN III, of Baltimore, Md., B. A. Yale University, 1958.
- WILLIAM WATTS PARMLEY, of Salt Lake City, Utah, B. A. Harvard University, 1957.
- JANICE MARIE PEARL, of Portland, Ore., B. A. Indiana University, 1954.

- ROSCOE HERMAN PLAYFORTH, of Morehead, Ky., B. S. University of Kentucky, 1959.
- LAWRENCE AUBURN PLUMLEE, of Plano, Texas, A. B. Princeton University, 1959.
- WILFRED BAXTER POSTEL, of Newburgh, N. Y., B. A. Amherst College, 1959.
- EDWARD IRA RADEL, of Baltimore, Md., B. S. Tufts University, 1959.
- GILBERT ALONZO RATCLIFF, JR., of Huntington, W. Va., A. B. Princeton University, 1959.
- LENORA CATHERINE REAGAN, of Syracuse, Ind., B. S. Marquette University, 1959.
- HOWARD ANTHONY RICHTER, of Skokie, Ill., B. A. The Johns Hopkins University, 1959.
- RICHARD KAY ROOT, of Leonia, N. J., A. B. Wesleyan University, 1959.
- TURPIN HARRY ROSE, of Baltimore, Md., B. A. The Johns Hopkins University, 1959.
- SAUL DAVID ROSKES, of Baltimore, Md., A. B. Dartmouth College, 1960.
- JOHN CUSHING ROWSE, of Gulfport, Fla., B. A. The Johns Hopkins University, 1959.
- LARRY DION RUTH, of Lincoln, Neb., B. S. University of Nebraska, 1958.
- DOUGLAS KENT SANDERSON, of Abington, Mass., A. B. Brown University, 1959.
- MARINDA KELLEY SCHWARTZ, of Washington, D. C., B. A. Wellesley College, 1957.
- MARGUERITE KRECKER SHEPARD, of Baltimore, Md., A. B. Smith College, 1959.
- WADE KILGORE SMITH, of Jackson Heights, N. Y., A. B. Oberlin College, 1959.
- PAUL STEINBERG, of New York, N. Y., B. S. City College of New York, 1959.
- WESLEY MAUNDER VIETZKE, of Valparaiso, Ind., A. B. De Pauw University, 1959.
- STEPHEN LESLIE WEITZ, of Lyons, N. J., A. B. University of Pennsylvania, 1959.

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## *MASTERS OF ARTS IN TEACHING*

- MARY ELIZABETH ALTHOUSE, of Frederick, Md., B. A. Wellesley College, 1962.
- THOMAS FRANCIS ARMSTRONG, of Ridgewood, N. J., B. A. University of Notre Dame, 1962.
- PHYLLIS ANNE BAILEY, of Timonium, Md., A. B. Wilson College, 1962.
- KENNETH FREDERICK BARTLEY, of Detroit, Mich., B. A. Kalamazoo College, 1962.
- SUSAN JENIFER BEATTY, of Raleigh, N. C., A. B. Oberlin College, 1962.
- JEANNE MARIE BECKER, of Lynbrook, N. Y., A. B. Trinity College, Washington, D. C., 1962.
- PAUL JUAN BECKHAM, of Baltimore, Md., B. A. Morgan State College, 1961.
- CAROLYN ANN MORK BELLANTI, of Millersville, Md., B. A. Hamline University, 1961.
- IRENE FLORENCE BRISTOL, of Collinsville, Conn., A. B. Middlebury College, 1962.
- GERALD MARVIN CAMP, of Baltimore, Md., B. A. The Johns Hopkins University, 1961.
- MARCIA GAIL DEHOND COLLINS, of Baltimore, Md., B. A. Pembroke College, 1960.
- BARBARA JEAN GRAMER, of Hales Corners, Wis., B. A. Carleton College, 1962.
- CAROL PETERSON CREELMAN, of Baltimore, Md., A. B. Radcliffe College, 1955.
- DAVID STEWART DANIELS, of Millbrook, N. Y., B. S. The St. Lawrence University, 1962.
- DOROTHY SUSAN DELANEY, of Sacramento, Calif., B. A. Elmira College, 1962.
- ANTHONY VANNOSTRAND DILLER, of Mt. Vernon, Me., B. A. Williams College, 1962.
- ALBERT HARRIS FAIRBANKS, of Westboro, Mass., B. A. Swarthmore College, 1962.
- F. DOUGLASS FIERO, of Baltimore, Md., B. A. Kalamazoo College, 1962.
- CHARLES EMISON FRASER, of San Leandro, Calif., A. B. University of California, Berkeley, 1956.
- SARA ELLEN GREENWALD, of Baltimore, Md., A. B. Goucher College, 1962.

- CARL FESTER GRETH, of Bowie, Md., A. B. Gettysburg College, 1954.
- HELEN MARCIA GUY, of Linden, N. J., A. B. Wilson College, 1962.
- ERNEST CARROLL HARRINGTON, JR., of Greenville, Me., B. A. University of Maine, 1962.
- SUSAN JABLONSKY, of Brooklyn, N. Y., A. B. Radcliffe College, 1962.
- WILLIAM SHERMAN JARDINE, of Albany, N. Y., B. A. Amherst College, 1962.
- REIDA JOHNSON KIMMEL, of Baltimore, Md., B. A. Swarthmore College, 1962.
- BARBARA LEE MOORE KOEHLER, of Baltimore, Md., B. A. Gettysburg College, 1960.
- LAURA LOUISE LAWLESS, of Morgantown, W. Va., A. B. West Virginia University, 1962.
- DOROTHY JEAN LEONARD, of Roanoke, Va., A. B. Randolph-Macon Woman's College, 1962.
- CHARLES GARDNER MALLONEE II, of Baltimore, Md., A. B. Harvard University, 1958.
- MICHAEL PATRICK MCCARTHY, of Rye, N. Y., A. B. Princeton University, 1959.
- JOHN WILLIAM McDERMOTT, JR., of Wolfboro, N. H., B. A. Amherst College, 1962.
- JOANN MARIE McMAHON, of Pittsfield, Mass., A. B. Smith College, 1962.
- PATRICIA JEAN McMAHON, of Sacramento, Calif., A. B. Manhattanville College of the Sacred Heart, 1962.
- MARY LU MILLION, of Joplin, Mo., B. A. Rosary College, 1961.
- ALICE NEALE MOGER, of Lexington, Va., A. B. Randolph-Macon Woman's College, 1962.
- JOANNE WINKENWERDER OLDBERG, of Chicago, Ill., A. B. Radcliffe College, 1960.
- LOUIS EDWIN PEASE, of Miami Springs, Fla., A. B. Duke University, 1962.
- LOUISE WETHERBEE PHELPS, of Springfield, Mass., A. B. Vassar College, 1962.
- JONATHAN PREUS, of Fergus Falls, Minn., B. A. Luthier College, 1961.
- SANDRA LEE RICKARDS, of Wichita Falls, Texas, B. A. University of Kansas, 1961.
- JOAN ELAINE HOLTZMAN SCHAEFFER, of West Hartford, Conn., B. S. Albright College, 1962.
- EMILY SYKES, of Smithfield, Va., A. B. Randolph-Macon Woman's College, 1962.
- MARY JANE VILARDO TEIFELD, of Westfield, N. Y., B. A. Hood College, 1962.
- JOSEPH CHARLES TERRY, of Baltimore, Md., B. A. The Johns Hopkins University, 1962.
- BARBARA SUE THOMPSON, of Houston, Texas, A. B. Barnard College, 1962.
- RALPH BERNARD WOOD, of Greenville, Mich., B. S. in Math. Case Institute of Technology, 1962.
- FLORENCE WRIGHT, of Phoenix, Md., B. A. New York University, 1961.

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## MASTERS OF ARTS

*with titles of essays*

- YVONNE MARGIT KRAFT ABHYANKAR, of Baltimore, Md., A. B. Barnard College, 1957. Physics.  
A Compilation of Experimental Data on Cross-Sections for Pion-Proton and Pion-Deuteron Interactions.
- JOHN ADAM ACKERMAN, JR., of Drexel Hill, Pa., B. S. Drexel Institute of Technology, 1958. Physics.  
Studies in the Far Infrared.
- ANDY PETER ANTIPPAS, of New York, N. Y., B. A. New York University, 1962. English.
- HELEN ANNE ASPBURY, of Milbrook, N. Y., B. A. Marymount College, New York, 1962. Writing Seminars.  
A Collection of Stories.
- MARGARET BAYNARD BAILEY, of Metairie, La., B. A. in Liberal Arts Southwestern Louisiana Institute, 1960. German.
- MICHAEL ANTHONY BERTA, of New Kensington, Pa., B. S. Allegheny College, 1961. Chemistry.
- JAMES RONALD BROSCART, of Towanda, Pa., B. A. St. John's College, Annapolis, Md., 1962. Writing Seminars.  
*A Native of Babylon*: Chapters of a Novel.
- JOHN MADISON BROWN, of Bethesda, Md., B. A. Yale University, 1956. German.



- JUDITH LYNN BUSHONG, of Camp Hill, Pa., B.A. Pembroke College, 1961. Art as Applied to Medicine.  
A Report of the Frequency and Distribution of the Pacinian Corpuscle in a Palm of a Seven Month Human Fetus.
- RICHARD THOMAS CLEARY, S. J., of Boston, Mass., B.A. Boston College, 1958. Biology.
- MARY JOYCE COWAN, of Detroit, Mich., A. B. Rutgers University, 1959. Physics.  
The Determination of Background Contamination in a Liquid Hydrogen Bubble Chamber.
- CAROLE ANN CROSS, of Towson, Md., B.A. Cabrini College, 1961. Writing Seminars.  
*Today Is a Green Day of Sea Crys.*
- SISTER MARY JEREMY DAIGLER, R. S. M., of Baltimore, Md., B.A. Mount St. Agnes College, 1960. Classics.
- JO ALICE DANIEL, of Osterville, Mass., B.A. Wisconsin State College, 1956. History.
- MURRAY B. DARRISH, of University City, Mo., B.A. University of Chicago, 1962. English.
- PAUL FREDERICK DELESPINASSE, of Honolulu, Hawaii, B.A. Willamette University, 1961. Political Science.  
The Development of Constitutional Monarchy as a Form of Government.
- EVA-RENAE DIETZMANN, of New York, N. Y., A. B. Barnard College, 1960. German.
- EUGENIO UMBERTO DONATO, of Baltimore, Md. Romance Languages.
- ROBERT WALDEN DUNDON, S. J., of Iron Mountain, Mich., A. B. St. Louis University, 1960. Chemistry.
- CLIFFORD DARWIN DURAND, of Jamestown, N. D., A. B. University of North Dakota, 1960. Philosophy.
- LARRY EUGENE ESTERLY, of New Waterford, Ohio, B.A. Youngstown University, 1961. Political Science.  
A Study of the Defeated Presidential Nominee as Opposition Party Leader Relative to the Experience of James M. Cox, John W. Davis, Alfred E. Smith, 1920-1932.
- CYNTHIA RILEY FEHSENFELD, of Baltimore, Md., A. B. Smith College, 1956. Writing Seminars.  
*Arlette.*
- ROBERT LOUIS GIROUARD, of Attleboro, Mass., B.A. Tufts University, 1962. Writing Seminars.  
*Words Without Songs: A Collection of Poems.*
- HANNAH JEANETTE FRIEDMAN GOLDBERG, of Yellow Springs, Ohio, A. B. Brandeis University, 1954. History.
- RICHARD DONALD GONZALEZ, of Buenos Aires, Argentina, B. Ch. E. Rensselaer Polytechnic Institute, 1961. Chemistry.
- LARRY KENT HAINES, of Baltimore, Md., B.A. The Johns Hopkins University, 1959. Physics.  
Steady State AC Solutions to the Conduction Equations for Additively Colored Alkali Halide Crystals.
- ROBERT KENNETH HAYCRAFT, of Silver Spring, Md., B.A. The George Washington University, 1959. Art.  
Francois Clouet's *Diane de Poitiers in Her Bath* at the National Gallery in Washington.
- WILLIAM HENRY HAZLETT, JR., of Wyoming, Pa., B.S. Marietta College, 1961. Geology.
- ROBERT CANNEL HERZ, of Paterson, N. J., A. B. Dartmouth College, 1962. Romance Languages.
- LAWRENCE ANDREW HETRICK III, of Gainesville, Fla., B.A. University of Florida, 1962. Writing Seminars.  
Five Short Stories.
- HAROLD RICK HITE, of Harrisburg, Pa., A. B. Dartmouth College, 1960. Romance Languages.
- A. K. M. MOMINUL HOQUE, of Feni, Pakistan, B.Sc. University of Dacca, 1955; M.Sc. University of the Panjab, 1957. Geology.
- HOLLY JOHNSTON HOWARTH, of Philadelphia, Pa., A. B. Wilson College, 1960. Writing Seminars.  
*The Cave*, by Jean Anouilh: A Translation from the French.
- PAUL JERALD JOHNSON, of Baltimore, Md., B.A. University of Chicago, 1961. Philosophy.
- HO JING KIM, of Seoul, Korea, B. S. Seoul National University, 1957. Chemistry.
- HORST ANDREAS KÜNZEL, of Nürnberg, Germany. German.
- LYNTON STUART LAND, of Glen Arm, Md., B.A. The Johns Hopkins University, 1962. Geology.
- JAMES ANTHONY LEONE, of Grosse Pointe, Mich., B. S. University of Cincinnati, 1961. Chemistry.
- RONALD JAMES LYNN, of Teaneck, N. J., B. S. in M. E. University of Maryland, 1957. Oceanography.  
Meridional Variation of Temperature-Salinity Characteristics of Pacific Ocean Surface Water.
- ROBERT JOSEPH MALMAD, of Brooklyn, N. Y., B.A. The Johns Hopkins University, 1961. Writing Seminars.  
Four Short Stories and One Character.
- ELISABETH ANN MITCHELL MARSEGLIA, of Croyden, England, B.A. University of Delaware, 1962. Chemistry.
- JAMES NEWELL MCCORD, JR., of Winter Garden, Fla., B.A. Emory University, 1960. History.



- ALICE SHIH-HOU HUANG MCGOWAN, of Gibsonia, Pa., B. A. The Johns Hopkins University, 1961. Microbiology.  
Studies on the Penetration by *Herpes simplex* Virus into Human Epidermoid Cells.
- GEORGE EDWARD MCGRATH, JR., of Washington, D. C., B. S. Georgetown University, 1957. German.
- DEE ANN MIMS, of Gainesville, Fla., A. B. Sarah Lawrence College, 1961. Writing Seminars.  
Three Short Stories and a Novella.
- PHILIP MOMBERGER, of Yeadon, Pa., B. A. Swarthmore College, 1961; M. A. Columbia University, 1963. English.
- GERALD CORNELIUS MONSMAN, of Towson, Md., B. A. The Johns Hopkins University, 1961. English.
- DONALD EDWARD MORTON, of Houston, Texas, B. A. Rice University, 1961. English.
- EVANGELOS N. MOUDRIANAKIS, of Chania, Greece, B. Sc. University of Athens, 1959. Biology.
- ARNOLD THOMAS ORZA, of Bronx, N. Y., B. A. Fordham University, 1962. English.
- THOMAS MICHAEL PATHE, of East Hartford, Conn., B. A. Tufts University, 1961. Writing Seminars.  
Two Stories and a Play.
- LOA JEAN PETERS, of Baltimore, Md. Writing Seminars.  
A Collection of Poems.
- THOMAS GEORGE PETERSON, of Biddeford, Me., B. A. University of Maine, 1962. German.
- CHARLES NEIL PILTCH, of Brooklyn, N. Y., B. A. Brooklyn College, 1962. English.
- RICHARD BAILY PRICE, of Baltimore, Md., B. A. The Johns Hopkins University, 1962. Writing Seminars.  
Collected Poems.
- MORRIS TRAWICK REAGAN, of Hazlehurst, Miss., B. A. Southwestern at Memphis, 1959; B. S., 1960. Chemistry.
- ROBERT BRUCE REEVES, of Baltimore, Md., B. S. Eastern Nazarene College, 1961. Chemistry.
- KAREN SAUM REICHARD, of Mt. Vernon, Iowa, A. B. Stanford University, 1956. History.
- RAYMOND JOSEPH RENNARD, JR., of Philadelphia, Pa., B. S. St. Joseph's College, Pennsylvania, 1961. Chemistry.
- RALPH DANIEL REYMOND, of Baltimore, Md., B. A. The Johns Hopkins University, 1959. Physics.  
Optical Methods of Atomic and Nuclear Polarization and Magnetic Resonance.
- MARY FLORENCE REYNOLDS, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1946. Writing Seminars.  
*A Certain Advantage* and *Davy*: Two Plays.
- MARVEL KAY RICHARDS, of Cazenovia, N. Y., B. A. Drew University, 1961. German.
- BENJAMIN ARTHUR RING, of Baltimore, Md., B. A. University of Maryland, 1947. Philosophy.
- CLARK GUYON RODEWALD, of Baltimore, Md., A. B. Bard College, 1958. English.
- INA ROSEN RUBENSTEIN, of Orange, Conn., B. A. University of California, Los Angeles, 1958. Education.  
A Comparison of Studies of Homogeneous Grouping for the Heterogeneous Mass of Elementary School Children with Studies of Homogeneous Grouping for the Gifted.
- GRETCHEN SCHIABTACH, of Schenectady, N. Y., B. S. McGill University, 1960. Biology.
- JOEL ERNEST SCHIECHTER, of Baltimore, Md., A. B. Wayne State University, 1961. Art as Applied to Medicine.  
An Investigation of the Anatomical Mechanisms of Testicular Descent.
- ERIC SCHNAPPER, of Silver Spring, Md., B. A. The Johns Hopkins University, 1962. Humanities.  
Galileo in France.
- TRENTON ORLANDO SCHROYER, of Bronx, N. Y., A. B. Antioch College, 1959. Philosophy.
- JUDSON RAY SCRUTON, of Sturgis, Mich., A. B. Wheaton College, 1962. Writing Seminars.  
*Shapes of Sound*.
- MICHAEL DAWSON STEPHENS, of Truro, Cornwall, England, B. A. University of Hull, 1960. Geography.  
The Problem of PreColumbian Mayan Agriculture.
- SAMUEL STERN, of Tallahassee, Fla., B. S. The City College of New York, 1960. Biophysics.  
The Reaction of Osmium Tetroxide with DNA Nucleotides.
- CARLYLE BELL STORM, of Lutherville, Md., B. S. The Johns Hopkins University, 1961. Chemistry.
- WILTON STURGES III, of Dothan, Ala., B. S. Alabama Polytechnic Institute, 1957. Oceanography.  
Sound Speed in Sea Water with Particular Reference to the Chesapeake Bay Institute Sound Velocity Fluctuation Meter.
- WILLIAM JAMES SULLIVAN, JR., of Harrison, N. J., A. B. St. Peter's College, 1962. German.
- THOMAS DAVID SWARTZ, of York, Pa., B. S. in Chem. Lehigh University, 1961. Chemistry.
- PATRICIA GRAVES THOMPSON, of Hampden-Sydney, Va., A. B. Randolph-Macon Woman's College, 1962. Classics.

- BARBARA EDITH TOAN, of Briarcliff Manor, N. Y., B. A. Bryn Mawr College, 1961. Geology.
- FRANCIS CHARLES TRUSCOTT, JR., of Baltimore, Md., B. A. in Journalism, University of Colorado, 1957. Writing Seminars.  
A Portion of a Novel and Selected Poems.
- JAMES GEORGE TRUSCOTT, of Somers Point, N. J., B. A. The Johns Hopkins University, 1962. Writing Seminars.  
33 Poem and Epigrams.
- MARGARET ELAINE WACHE, of Kansas City, Mo., B. A. Washington University, 1960. Political Economy.  
Adequacy and Stability of Commercial Banking in the United States: The Role of Branch Banking.
- LYLE OWEN WALCOTT, of Baltimore, Md., A. B. Michigan State University, 1960. Philosophy.
- PATRICIA SPAIN WARD, of Baltimore, Md., B. A. University of Colorado, 1954. History.
- MATTHEW SAUL WATSON, of Chevy Chase, Md., B. A. The Johns Hopkins University, 1962. Political Economy.  
A Determination of Rates for a Progressive Expenditure Tax.
- HERBERT WEINGARTNER, of New York, N. Y., B. S. The City College of New York, 1956. Psychology.  
Associative Structure and Serial Learning.
- ROBERT EUGENE WYATT, of Oak Park, Ill., B. S. Illinois Institute of Technology, 1961. Chemistry.

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## DOCTORS OF PHILOSOPHY

*with titles of dissertations*

- BARRY FRANKLIN ANDERSON, of Redwood City, Calif., A. B. in Psychology, Stanford University, 1957. Psychology.  
The Short-term Retention of Active and Passive Sentences.
- JAMES CARROLL ATKINSON, of Greensboro, N. C., A. B. Duke University, 1953; M. A. 1955. Romance Languages.  
(II) Vint un Moment où . . . A Comparison of the Two Forms of Subject Inversion in Modern French.
- MARK AARON BERKLEY, of Colchester, Conn., B. S. Trinity College, Conn., 1958; M. A. The Johns Hopkins University, 1961. Psychology.  
Discrimination of Rewards as a Function of Contrast in Reward Stimuli.
- WILMA BOATMAN BIAS, of Baltimore, Md., B. S. The University of Oklahoma, 1949. Biology.  
Studies of Galactose-1-Phosphate Uridyl Transferase and Uridine Diphosphogalactose 4-Epimerase in Normal and Galactosemic Cultured Skin Fibroblasts.
- WILLIAM CHAULK BIRDSALL, S. J., of Rapid City, S. D., B. A. Saint Louis University, 1958. Political Economy.  
Public Finance Allocation Decisions and the Preferences of Citizens: Some Theoretical and Empirical Considerations.
- NATALIE SUZANNE HARRIS BLUESTONE, of Seattle, Wash., B. A. Brandeis University, 1953; M. A. The Johns Hopkins University, 1956. Philosophy.  
Time and Consciousness in Jean-Paul Sartre and William James.
- JOSEPH GRANT BREWEN, of Easton, Pa., B. A. The Johns Hopkins University, 1961. Biology.  
The Effect of Total Dose and Dose Rate on the Frequency of Observed X-Ray-Induced Chromosome Aberrations in a Mammalian In Situ System.
- BENJAMIN BRIDGES, JR., of Leesburg, Va., B. A. Duke University, 1958. Political Economy.  
Treatment of State and Local Nonbusiness Taxes under the Federal Individual Income Tax: Tax Deductions and Tax Credits.
- MARGARET ANNE CASTLE, of Fredericksburg, Va., A. B. Oberlin College, 1957; M. A. The Johns Hopkins University, 1959. Chemistry.  
The Halogenation of Steroid Ketones.
- EDWARD HOLTON MACPHAIL CHOWN, of Kingston, Canada, B. Sc. Queen's University, 1955; M. A. Sc. The University of British Columbia, 1957. Geology.  
Amphibolites of the Papachouesati River Area, Mistassini Territory, Quebec.
- WEN-HWA CHU, of Shanghai, China, B. S. National Central University, 1947; M. S. University of Washington, 1950. Mechanics.  
Some Contributions to Unsteady Hydrodynamics in Engineering.
- ALBERT EDWARD CHUNG, of Kingston, Jamaica, B. Sc. The University of London, 1957; M. Sc. 1959. Physiological Chemistry.  
Studies on Human Erythrocyte Glucose-6-Phosphate Dehydrogenase.



- H. EDWARD CLIFTON, of Jefferson, Ohio, B. Sc. The Ohio State University, 1956. Geology.  
The Pembroke Breccia of Nova Scotia.
- CHARLES VERNON COFFMAN, of Hagerstown, Md., B. E. S. The Johns Hopkins University, 1957. Mathematics.  
Asymptotic Behavior of Solutions of Ordinary Difference Equations.
- FRANCIS JEROME COLEMAN, of Miami, Fla., A. B. University of Miami, 1960. Philosophy.  
An Essay Concerning Critical Reasoning.
- JOHN JOSEPH CONDER, of Linden, N. J., B. A. Williams College, 1954; M. A. University of Chicago, 1955. English.  
*Mont-Saint-Michel and Chartres* and *The Education of Henry Adams: The Study of an Experiment in Literary Form*.
- JOHN PATRICK CORCORAN, JR., of Baltimore, Md., B. E. S. The Johns Hopkins University, 1959; M. A. 1962. Philosophy.  
Generative Structure in Two-Valued Logics.
- LARRY GRANT DE SHAZER, of Baltimore, Md., B. S. University of Maryland, 1956. Physics.  
Spectra and Energy Levels of  $\text{Eu}^{2+}$  in  $\text{LaCl}_3$  and Fluorescent Quantum Efficiencies of Rare Earth Salts.
- ALAN CHARLES DESSEN, of Baltimore, Md., A. B. Harvard University, 1957; M. A. The Johns Hopkins University, 1961. English.  
Ben Jonson and the *Estates* Morality Tradition.
- ELIZABETH DOROTHEA DIPPLE, of Mitchell, Canada, B. A. The University of Western Ontario, 1959; M. A. The Johns Hopkins University, 1961. English.  
Sidney's Changing Concept of Arcadia: The Redemption of a Landscape.
- JACQUES DREYFUSS, of Mamaroneck, N. Y., B. S. Beloit College, 1958. Biology.  
The Assimilation of Sulfate into Cysteine as Studied with Cysteine-Requiring Mutants of *Salmonella typhimurium*.
- DAVID WILLIAM DUTTWEILER, of Silver Spring, Md., B. S. E. (C. E.) University of Michigan, 1948; M. S. E. The Johns Hopkins University, 1957. Sanitary Engineering and Water Resources.  
A Mathematical Model of Stream Temperatures.
- STANLEY LEWIS ENGERMAN, of Brooklyn, N. Y., B. S. New York University, 1956; M. B. A. 1958. Political Economy.  
Postwar Regional Cycles and their Implications for Fiscal Policy.
- THOMAS PATRICK FEHLNER, of Dolgeville, N. Y., B. S. St. Bernardine of Siena College, 1959; M. A. The Johns Hopkins University, 1961. Chemistry.  
The Production of Unstable Species in the Boron Hydrides.
- GEORGE WESCOTT FISHER, of Suitland, Md., B. A. Dartmouth College, 1959; M. A. The Johns Hopkins University, 1962. Geology.  
The Petrology and Structure of the Crystalline Rocks along the Potomac River, near Washington, D. C.
- AVROM HIRSCH FLEISHMAN, of Hampstead, N. Y., A. B. Columbia University, 1954; M. A. The Johns Hopkins University, 1956. English.  
Conrad's Politics: Community and Anarchy in the Fiction of Joseph Conrad.
- ROBERT WILLIAM FOGEL, of Rochester, N. Y., A. B. Cornell University, 1948; A. M. Columbia University, 1960. Political Economy.  
Railroads and Economic Growth: Essays in Economic History.
- WALTER WILLIAM FREDRICKS, of Garrett Park, Md., B. A. La Salle College, 1957. Biology.  
A Soluble Component of the Hill Reaction in *Anacystis nidulans*.
- MICHAEL DAVID GARRICK, of Hampton, Va., B. A. The Johns Hopkins University, 1959. Biology.  
Enzymic and Antigenic Properties of Neurospora Tryptophan Synthetase after Treatment with Trypsin.
- LOUIS CLAUDE GAWTHROP, of Baltimore, Md., A. B. Franklin and Marshall College, 1958; M. A. The Johns Hopkins University, 1960. Political Science.  
Congress and Foreign Aid: A Study of Congressional Control over the Administration of Foreign Aid Policy.
- RIMANTAS GLEMZA, of Baltimore, Md., A. B. Rutgers University, 1957; M. A. The Johns Hopkins University, 1961. Chemistry.  
The Mechanism of Oxygen Chemisorption on Zinc Oxide.
- NATHAN GROSS, of Brooklyn, N. Y., A. B. Columbia University, 1960; M. A. The Johns Hopkins University, 1962. Romance Languages.  
Racine in Socks.
- LOWELL HEADLEY HALL II, of Cuyahoga Falls, Ohio, B. S. Eastern Nazarene College, 1959; M. A. The Johns Hopkins University, 1961. Chemistry.  
On the Nature of Some Higher Boron Hydrides.
- GUNNAR HESKESTAD, of Haugesund, Norway, B. S. in M. E. University of New Hampshire, 1956; M. S. M. E. Purdue University, 1957. Mechanics.  
Two Turbulent Shear Flows: I. The Plane Jet, II. The Radial Jet.
- DELBERT ROY HILLERS, of Baltimore, Md., B. A. Concordia Theological Seminary, 1954; B. D. 1957; M. A. The Johns Hopkins University, 1958. Oriental Seminary.  
Treaty Curses and the Old Testament Prophets.



- CHARLES FREDERICK HOOPER, JR., of Lutherville, Md., A. B. Dartmouth College, 1954. Physics.  
Cluster-Expansion Corrections to the Debye-Hückel Pair-Correlation Function for Ionized Gases.
- PETER KEIM IBER, of Roselle, N. J., B. A. The Johns Hopkins University, 1959; M. A. 1961. Chemistry.  
Studies on Chlorophylls and Related Compounds.
- BLAIR FRANCIS JONES, of Bethesda, Md., B. A. Beloit College, 1955. Geology.  
Hydrology and Mineralogy of Deep Spring Lake, Inyo County, California.
- EDWARD JOSEPH KEALEY, of Flushing, N. Y., A. B. Manhattan College, 1958; M. A. The Johns Hopkins University, 1962. History.  
Roger, Bishop of Salisbury and Chief Justiciar of All England 1100-1139.
- POSEY WASHINGTON KEATON, JR., of Roanoke, Va., B. S. Emory and Henry College, 1957. Physics.  
Nuclear Polarization in the  $B^{11}(d,p)B^{12}$  Reaction.
- DONALD FREDERICK KOENIG, of Cuyahoga Falls, Ohio, B. S. in Physics, Carnegie Institute of Technology, 1949; M. S. University of Pittsburgh, 1954. Biophysics.  
The Structure of Chlorohemin,  $C_{34}H_{32}N_4O_4FeCl$ .
- JAMES LeBEAU LAMBERT, S. J., of Tampa, Fla., B. S. Spring Hill College, 1959; M. A. The Johns Hopkins University, 1961. Chemistry.  
Homoenolate Anions.
- JACOB WOOLF LANDYNSKI, of Brooklyn, N. Y., B. A. Brooklyn College, 1958; M. A. The Johns Hopkins University, 1959. Political Science.  
Search and Seizure and the Supreme Court: A Study in Constitutional Interpretation.
- WILLIAM ROBERT LANE, of Pittsburgh, Pa., B. S. in Chem. Clarkson College of Technology, 1951; B. D. Western Theological Seminary, 1954. Oriental Seminary.  
A Handbook of Phoenician Inscriptions.
- WAYNE CLEMENT LEE, of Newark, N. Y., B. E. E. Syracuse University, 1957. Psychology.  
Choosing among Confusably Distributed Stimuli with Specified Likelihood Ratios.
- JOHN JOSEPH LENTZ, of Baltimore, Md., B. S. The United States Military Academy, 1952; M. S. E. The Johns Hopkins University, 1957. Sanitary Engineering and Water Resources.  
Estimation of Design Maximum Domestic Sewage Flow Rates.
- ROLAND J. LESSEPS, S. J., of New Orleans, La., B. S. Spring Hill College, 1958. Biology.  
Electron Microscopy of Dissociated and Reaggregating Embryonic Chick Cells.
- GILBERT VICTOR LEVIN, of Washington, D. C., B. E. The Johns Hopkins University, 1947; M. S. E. 1948. Sanitary Engineering and Water Resources.  
Metabolic Uptake of Phosphorus by Sewage Organisms.
- ROBERT DICKINSON LOEVY, of Baltimore, Md., B. A. Williams College, 1957; M. A. The Johns Hopkins University, 1959. Political Science.  
Political Behavior in the Baltimore Metropolitan Area.
- HENRY JAMES LORY, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1958. Electrical Engineering.  
A Forming Study of Point-Contact Tunnel Diodes.
- ELDON RAY LUCAS, of Akron, Ohio, B. A. Butler University, 1959. Philosophy.  
Some Aspects of Kant's Philosophy of Mathematics.
- THOMAS EDWARD MARESCA, of Jersey City, N. J., A. B. St. Peter's College, 1959; M. A. The Johns Hopkins University, 1961. English.  
Pope's Horatian Poems.
- JOHN GEORGE MARZOLF, S. J., of Watertown, N. Y., A. B. Fordham University, 1956; M. A. T. 1958; M. S. 1959. Physics.  
Single Crystal Diffraction Patterns for Monochromatic Radiation.
- JOHN PARMELEE McDOWELL, of New Orleans, La., B. S. Yale University, 1953; M. A. Dartmouth College, 1955. Geology.  
A Paleocurrent Study of the Mississagi Quartzite along the North Shore of Lake Huron.
- JAMES MUNRO MCPHERSON, of Princeton, N. J., B. A. Gustavus Adolphus College, 1958. History.  
The Abolitionists and the Negro during the Civil War and Reconstruction.
- MOSLEY AHRON MEER, of West Lafayette, Ind., A. B. Brandeis University, 1956. Physics.  
Decay Properties of the  $\eta$  and  $\omega$  Mesons.
- WILFORD LEE MENDELSON, of Baltimore, Md., B. A. The Johns Hopkins University, 1958; M. A. 1960. Chemistry.  
Photosensitized Oxygenation of Steroid Allylic Alcohols.
- GERALD REUBUSH MILLER, of Roanoke, Va., B. A. The Johns Hopkins University, 1959. Psychology.  
Extra-experimental Transfer in Serial Recall.
- JAN MICHAEL MINKOWSKI, of Baltimore, Md., B. S. Swiss Federal Institute of Technology, 1947; M. S. 1959. Physics.  
Cross Relaxation in Non-Zeeman Spin Systems.
- AKIRA OKUBO, of Tokyo, Japan, B. E. Tokyo Institute of Technology, 1947. Oceanography.  
Horizontal Diffusion from an Instantaneous Point-Source Due to Oceanic Turbulence.

- CHARLES WILLIAM MORTON ORR, of Edinburgh, Scotland, B. S. in Agriculture, The University of Glasgow, 1956. Biology.  
A Chemical Analysis of the Fat Body and Ovaries during Vitellogenesis in the Blowfly: The Influence of Nutritional and Hormonal Factors.
- HSIEN-PING PAO, of Taipei, Taiwan, B. S. National Taiwan University, 1956. Mechanics.  
Three-Dimensional Magnetohydrodynamic Jet-Vortex of a Viscous Conducting Fluid.
- ROBERT BENJAMIN PATTERSON, of West Hartford, Conn., B. A. St. Bernard's Seminary and College, 1956; M. A. Trinity College, Connecticut, 1958. History.  
Robert Fitz Roy, Earl of Gloucester: A Study of a Baron c. 1093-1147.
- RUDOLPH GERHARD PENNER, of Toronto, Canada, B. of Commerce, University of Toronto, 1958. Political Economy.  
Foreign Investment and Canadian Economic Growth, 1950 to 1959.
- MAXWELL PRIMACK, of Shamokin, Pa., A. B. Brandeis University, 1956; M. A. The Johns Hopkins University, 1959. Philosophy.  
Francis Bacon's Philosophy of Nature.
- HAROLD JOHN PROSTKA, of Elmont, N. Y., B. A. Hofstra College, 1957. Geology.  
Geology of the Sparta Quadrangle, Oregon.
- CLARENCE ROBERT RICHARDSON, of Reno, Nev., B. S. University of Nevada, 1957. Physics.  
Two-Pion Resonances Below Mass 900 MeV.
- PEGGY BREWER RICHMAN, of Pennington, N. J., B. A. The American University, 1959; M. A. 1960. Political Economy.  
Economic Aspects of the Taxation of Foreign-Earned Business Income.
- ROBERT DONALD SACKS, of Akron, Ohio, B. A. St. John's College, Maryland, 1954. Humanities.  
Maimonides' Commentary to the Tractate of Rosh ha-Shanah.
- HAJIME SAKAI, of Tokyo, Japan, M. S. University of Hawaii, 1957. Physics.  
A Slit Function Correction and an Application to the Study of the Absorption Lines in the H<sub>2</sub>O Pure Rotation Spectrum.
- ELEANOR ARMSTRONG SAMWORTH, of Wilmington, Del., A. B. Wilson College, 1958; M. A. The Johns Hopkins University, 1960. Chemistry.  
Vibrational Spectra of Hexafluorodisilane and Hexafluorodisiloxane.
- SIEGFRIED JULIO SCHWANTES, of Pocos de Caldas, Brazil, B. A. Pacific Union College, 1938; M. A. Seventh-Day Adventist Theological Seminary, 1949. Oriental Seminary.  
A Critical Study of the Text of Micah.
- HENRY ALLEN SCHWARTZ, of Hampton, Va., B. S. The College of William and Mary, 1959; M. A. The Johns Hopkins University, 1961. Psychology.  
The Influence of Instructional Set and Response Frequency on Retroactive Inhibition.
- JOHN PETER SHANAHAN, of Fermoy, County Cork, Ireland, B. Sc. University College, 1956. Mathematics.  
On Some Questions on Hyperbolic Differential Equations.
- MARSHALL SPECTOR, of Chicago, Ill., B. S. in Physics Illinois Institute of Technology, 1957; S. M. The University of Chicago, 1959. Philosophy.  
Theory and Observation: An Examination of Some Problems in Logical Empiricism.
- OTIS HAMMOND STEPHENS, JR., of East Point, Ga., A. B. University of Georgia, 1957; M. A. 1958. Political Science.  
The Fourteenth Amendment and Confessions of Guilt: The Role of the Supreme Court.
- LOUIS JOSEPH SWIFT, of Dover, Del., B. A. St. Mary's Seminary and University, 1954; S. T. B. Gregorian University, Rome, 1956; M. A. T. The Johns Hopkins University, 1958. Classics.  
Eis Basilea, a Third Century Encomium.
- ROBERT MAX TER HORST, of Rehoboth, Del., A. B. Princeton University, 1952; M. A. The Johns Hopkins University, 1961. Romance Languages.  
La Vida es Sueño: the Role of Conflict.
- RALPH VERNON TURNER, of Forrest City, Ark., B. A. University of Arkansas, 1957; M. A. 1958. History.  
The Role of the King in the English Royal Courts of Justice 1199-1240.
- EUGENE ROBERT WEINER, of Baltimore, Md., B. S. Ohio University, 1950; M. S. University of Illinois, 1957. Chemistry.  
Some Ion Molecule and Charge Transfer Reactions in a Tandem Mass Spectrometer.
- DAVID GEORGE WHITTEN, of Baltimore, Md., B. A. The Johns Hopkins University, 1959; M. A. 1961. Chemistry.  
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## *THE UNIVERSITY ODE*

Truth guide our University  
And from all error keep her free;  
Let Wisdom yield her choicest treasure,  
And Freedom reach her fullest measure;  
Oh, let her watchword ever be  
The truth of God will make you free,  
Will make you free!

## *THE UNIVERSITY MOTTO*

*Veritas vos liberabit.*  
The truth shall make you free.  
—St. John 8:32